

Bariatric aktuell:

Indikation
Nutzen
Nachsorge

Dr. Thomas Köstler

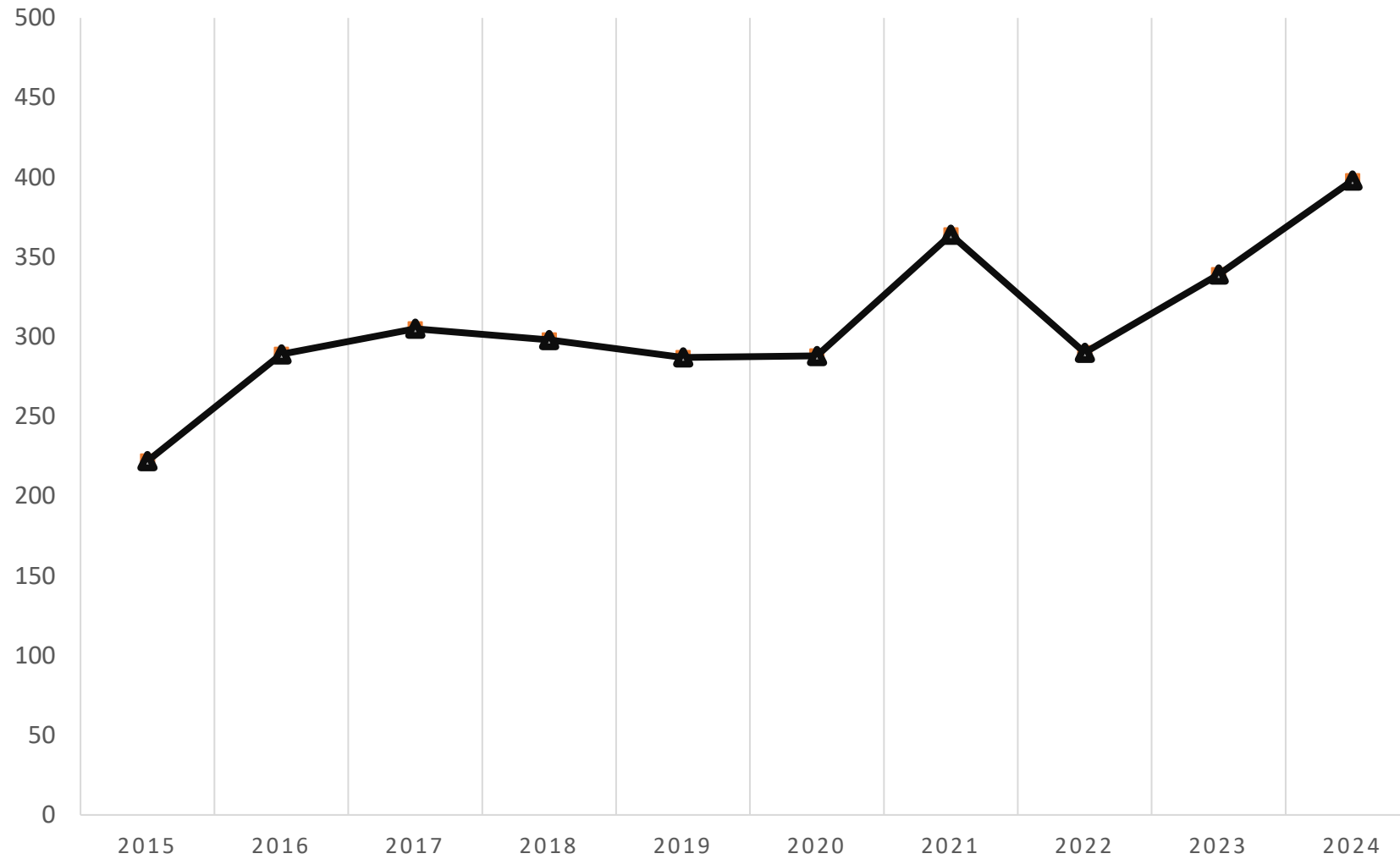
FMH Chirurgie, Spez Allgemeine Chirurgie und Traumatologie und
Viszeralchirurgie

Leiter Adipositaszentrum Limmattal

Adipositas Zentrum Limmattal






DIE LETZTEN 10 JAHRE....



Qualitätsindikatoren Fallzahl


E.8.1.M Bariatrische Chirurgie

Fallzahlen für 2023

Spital 	Kanton 	Anzahl Fälle 
Spital Limmattal	ZH	250
Solothurner Spitäler AG	SO	180
Kantonsspital St. Gallen	SG	160
Hirslanden Klinik Stephanshorn	SG	155
St. Claraspital	BS	150
Hirslanden Bern AG	BE	150
Lindenhofgruppe AG	BE	133
Spital Männedorf AG > Kommentar	ZH	132
Hôpital Riviera-Chablais Vaud-Valais	VD	127
Gruppo ospedaliero Moncucco Clinica Moncucco	TI	127

Z.4.16.F Spezialisierte Bariatrische Chirurgie (IVHSM)

Fallzahlen für 2023

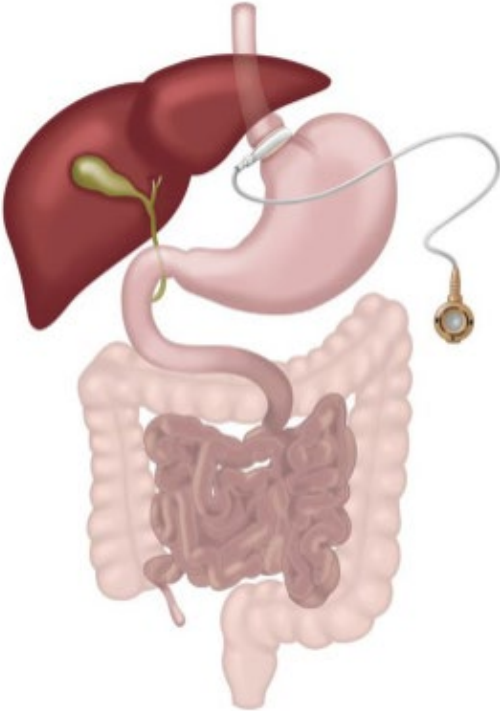
Spital 	Kanton 	Anzahl Fälle 
Spital Limmattal	ZH	121
Hirslanden Bern AG	BE	104
St. Claraspital	BS	86
Kantonsspital St. Gallen	SG	74
Lindenhofgruppe AG	BE	68
Universitätsspital Zürich	ZH	57
LUKS Spitalbetriebe AG	LU	56
Insel Gruppe AG (universitär)	BE	55
Solothurner Spitäler AG	SO	54
Gruppo ospedaliero Moncucco Clinica Moncucco	TI	51

Welcher Patient eignet sich für welchen Eingriff?

Aktueller Standard? (Gibt es einen Standard?)

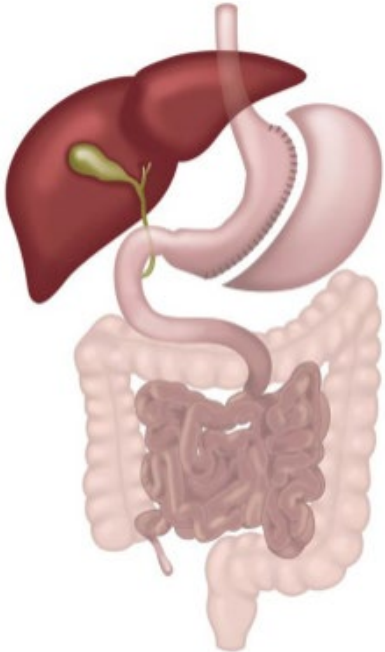
Langzeitresultate

Magenband



Magenband
© Spital Limmattal

Schlauchmagen (Gastric Sleeve)



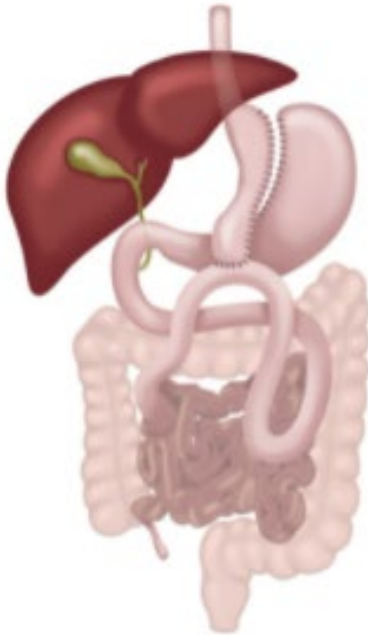
Schlauchmagen
© Spital Limmattal

RY-Magenbypass



Roux-en-Y-Magenbypass
© Spital Limmattal

OMEGA Magenbypass



Omega Magenbypass
© Spital Limmattal

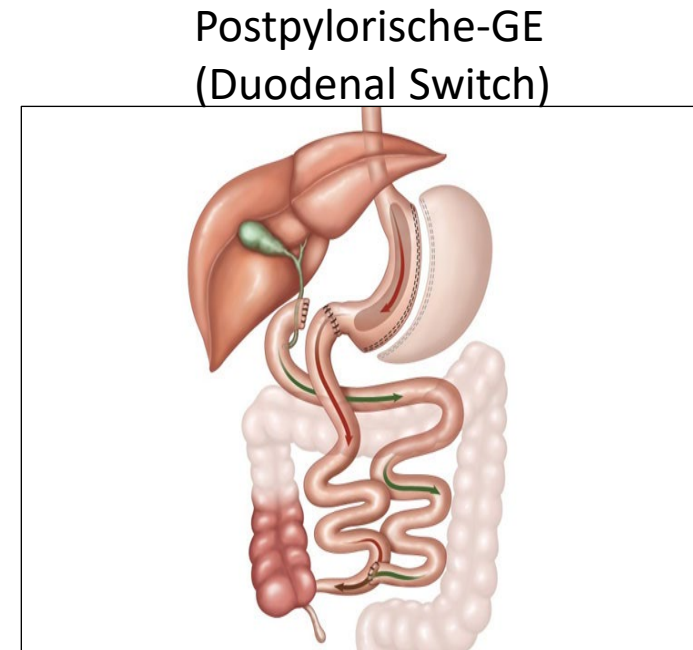
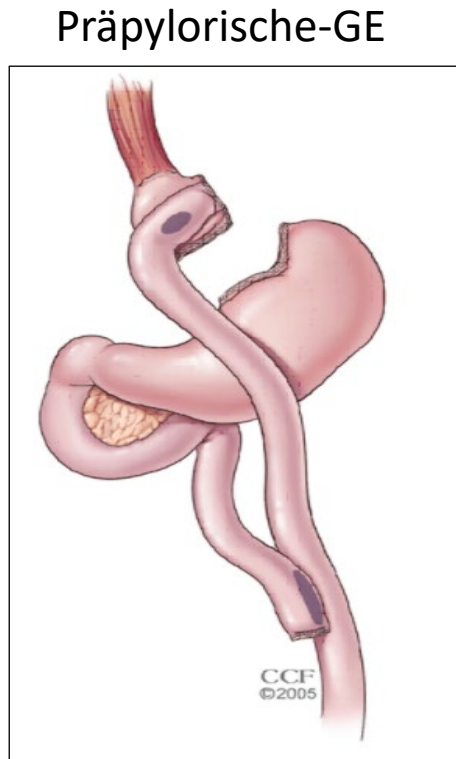
Operationsdauer: 40-90 Minuten
Spitalaufenthalt \emptyset 3Tage

Immer minimalinvasiv

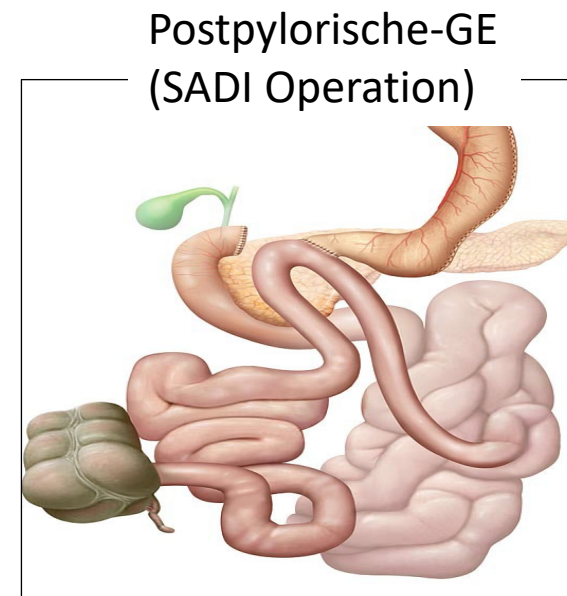
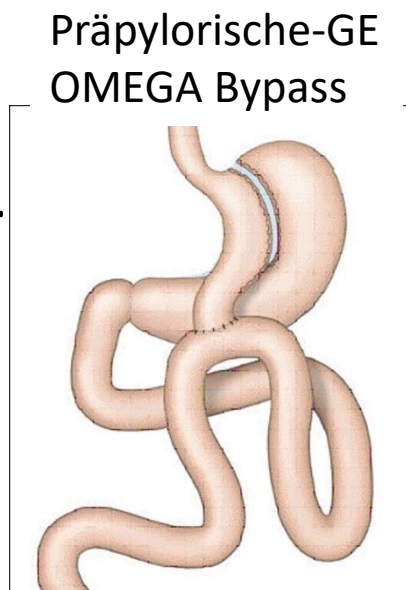
Sofortige Kostaufbau
Lebenslange Nachbetreuung

Bypass- Verfahren

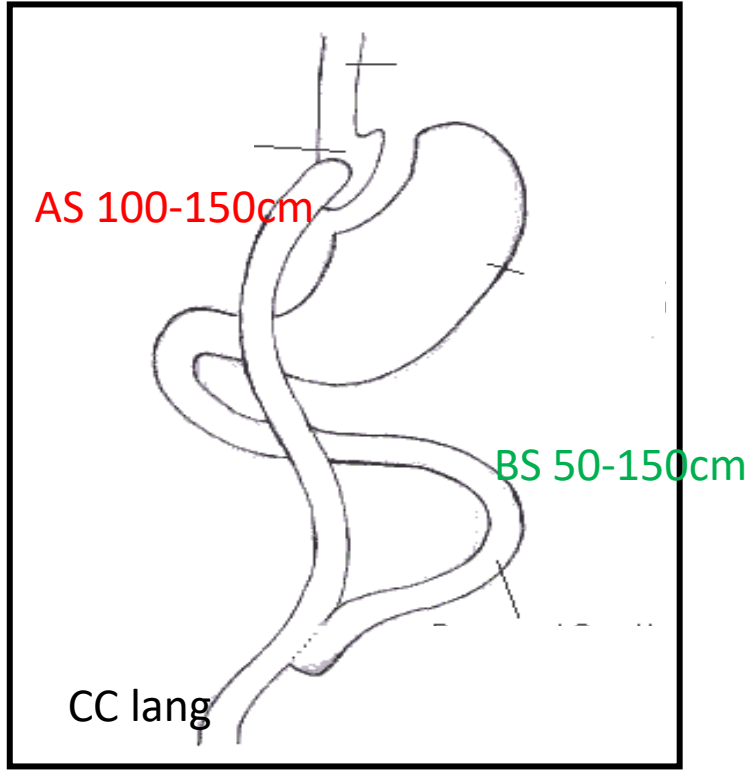
1. Y-Bypass →



2. Singel-Anastomosis-
Bypass →

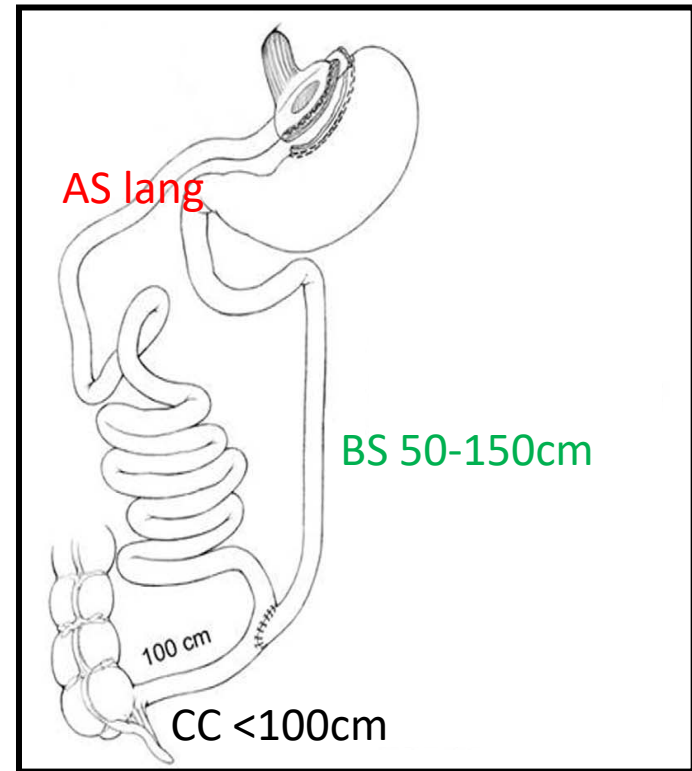


Proximaler RY-Magenbypass

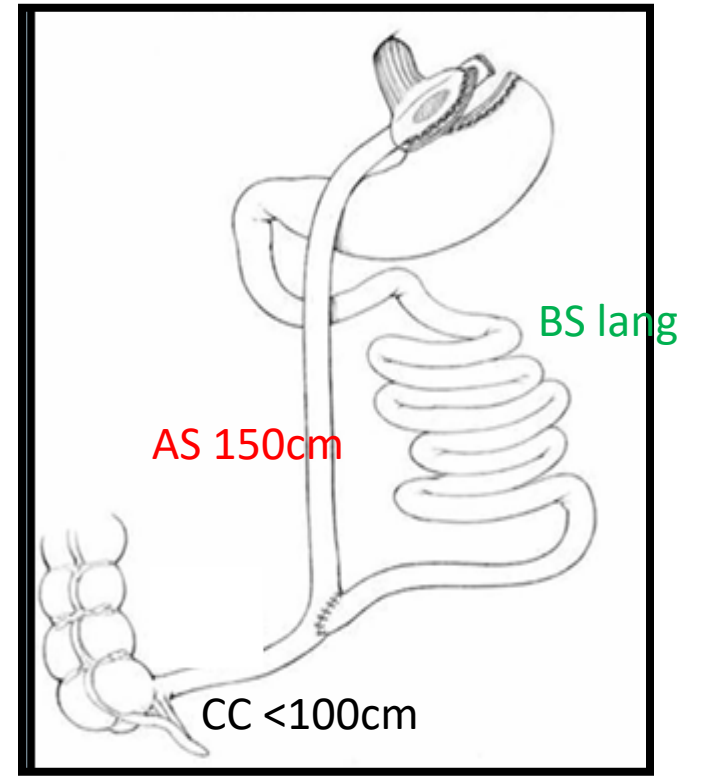


Distaler RY-Magenbypass

"VVLL" Magenbypass

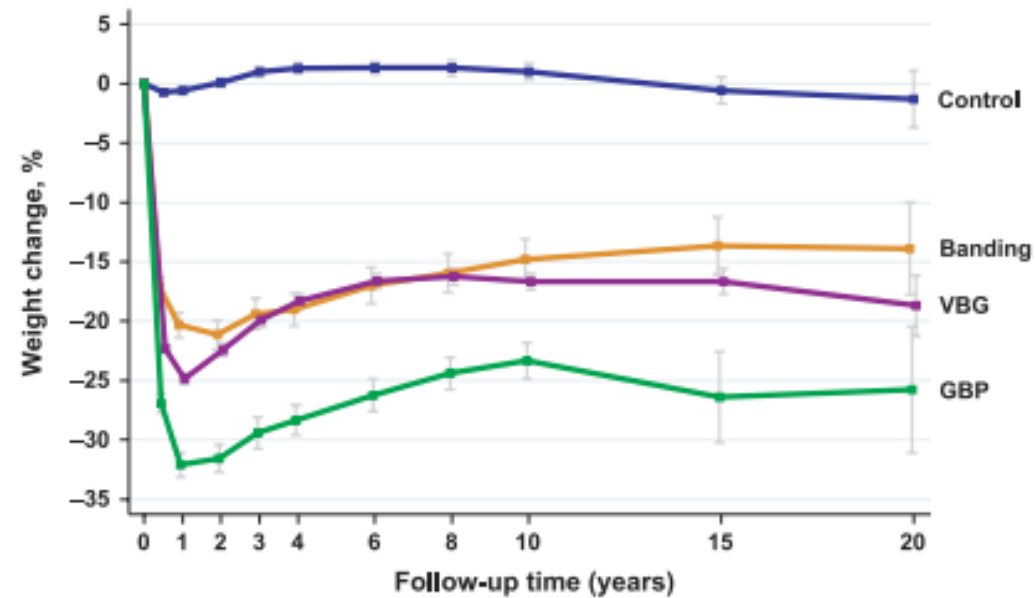


Biliopankreatischer Magenbypass



Langzeitresultate

Gewichtsverlust 10-20 Jahre



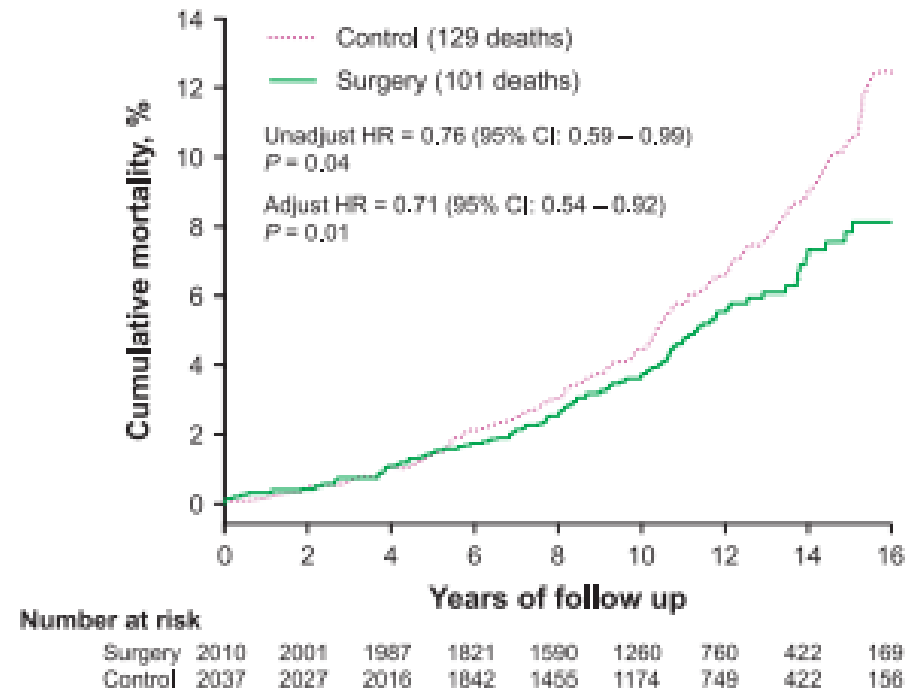
No. examined	0	1	2	3	4	6	8	10	15	20
Control	2037	1490								
Banding	376	333								
VBG	1369	1086								
GBP	265	209								

doi: 10.1111/joim.12012

Review of the key results from the Swedish Obese Subjects (SOS) trial – a prospective controlled intervention study of bariatric surgery

Langzeitresultate

Mortalität 10-20 Jahre

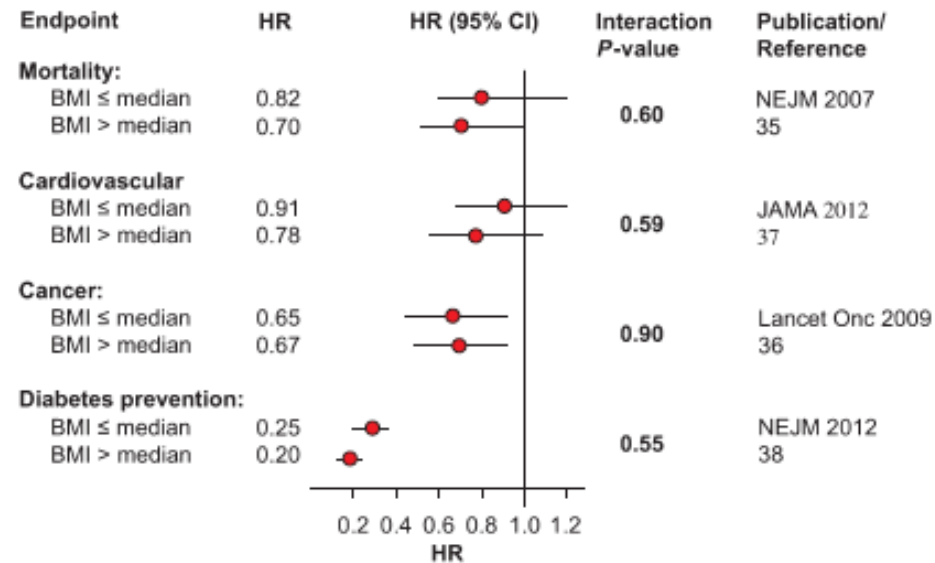
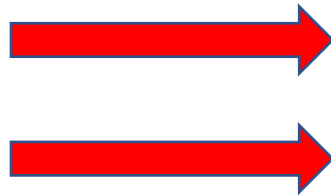


doi: 10.1111/joim.12012

Review of the key results from the Swedish Obese Subjects (SOS) trial – a prospective controlled intervention study of bariatric surgery

Langzeitresultate

Inzidenz von Komorbiditäten >10 Jahre



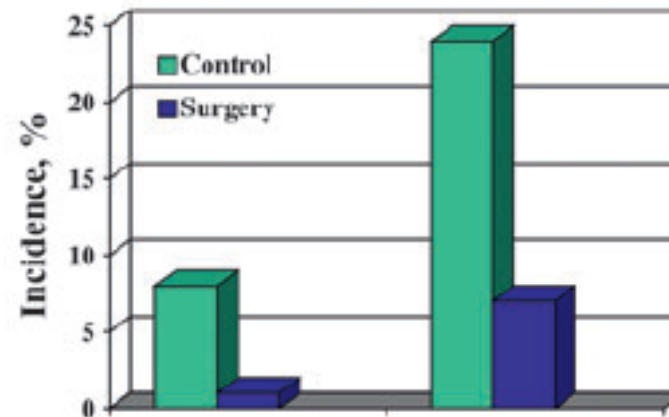
doi: 10.1111/joim.12012

Review of the key results from the Swedish Obese Subjects (SOS) trial – a prospective controlled intervention study of bariatric surgery

Langzeitresultate

Diabetes Typ 2 Inzidenz

(b) SOS. Incidence of diabetes over 2 and 10 years



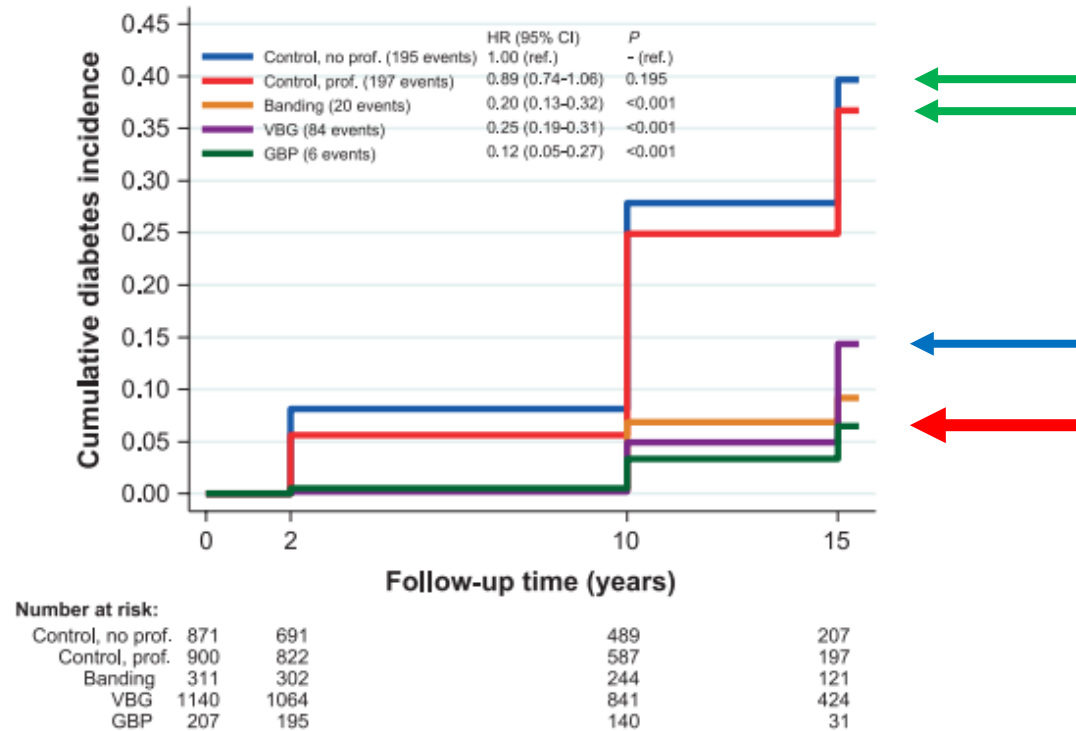
	2 year	10 year
Number of subjects:		
Control	1402	539
Surgery	1489	517
Adjusted Odds ratio	0.14	0.25
95% CI	0.08 - 0.24	0.17 - 0.38
P value	<0.001	<0.001

doi: 10.1111/joim.12012

Review of the key results from the Swedish Obese Subjects (SOS) trial – a prospective controlled intervention study of bariatric surgery

Langzeitresultate

Diabetes Typ 2 Inzidenz

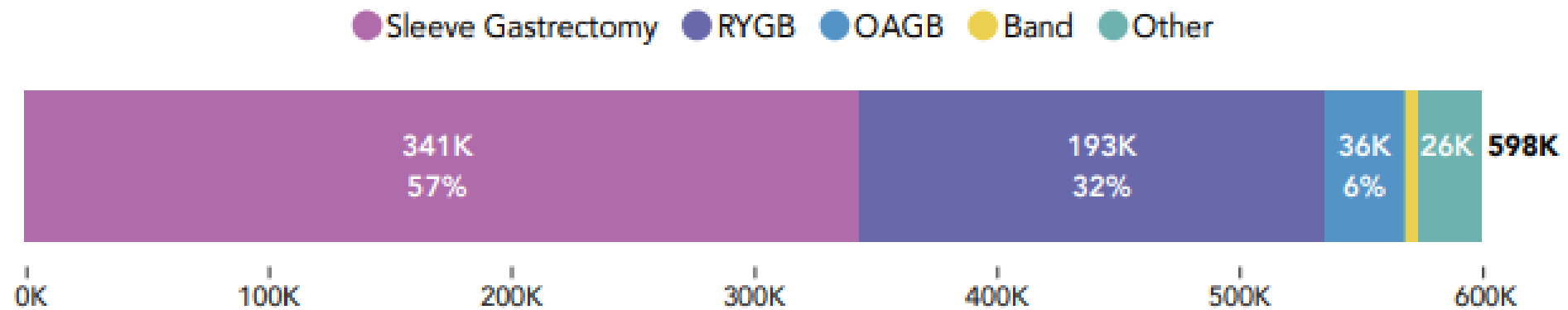


doi: 10.1111/joim.12012

Review of the key results from the Swedish Obese Subjects (SOS) trial – a prospective controlled intervention study of bariatric surgery

IFSO Register 2023

Figure 3. Total procedures by operative type, n=598,137 (2023)



Langzeitresultate

Gewichtsverlust 10-20 Jahre

Table 5 Summary of systematic review of weight loss and reoperation rates

Procedure	No. of reports	Weighted mean % EWL	Mean % EWL range	Reoperation rate range
RYGB	16	55.4	27-69	8-64%
OAGB	2	80.9	70-84	2-14%
LAGB	17	45.9	27-66	8-78%
BPD	4	71.5	64-73	NR
DS	7	75.2	61-94	3-37%
Sleeve	2	57.0	53-62	32-36%
Gastroplasty	7	50.9	- 10-62	10-40%

The single reports of fixed band and plication from Table 6 are not included

RYGB Roux-en-Y gastric bypass, *OAGB* one anastomosis gastric bypass, *LAGB* laparoscopic adjustable gastric band, *BPD* biliopancreatic diversion, *DS* duodenal switch, , NR = not recorded

Langzeitresultate

Effect of Laparoscopic Sleeve Gastrectomy
vs Laparoscopic Roux-en-Y Gastric Bypass on Weight Loss
at 5 Years Among Patients With Morbid Obesity
The SLEEVEPASS Randomized Clinical Trial

Paulina Salminen, MD, PhD; Mika Helmio, MD; Jari Ovaska, MD, PhD; Anne Juuti, MD, PhD; Marja Leivonen, MD, PhD; Pipsa Peromaa-Haavisto, MD, PhD;
Saija Hurme, MSc; Minna Soinio, MD, PhD; Pirjo Nuutila, MD, PhD; Mikael Victorzon, MD, PhD

Resultate nach 5 Jahren

%EBMIL Sleeve: **60%**

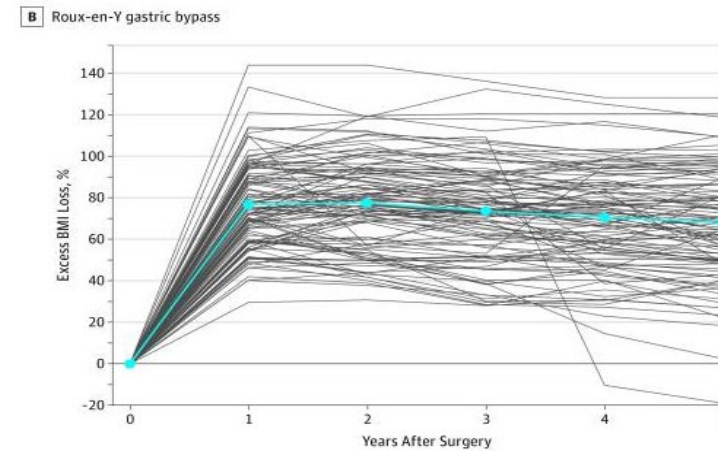
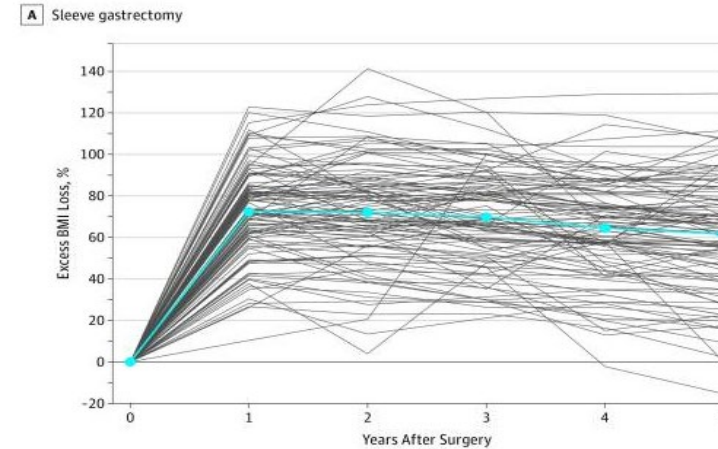
%EWL Sleeve: **49%**

%EBMIL RY-Magenbypass: **70%**

%EWL RY-Magenbypass : **57%**

%EBMIL = $[(\text{Preoperative BMI} - \text{current BMI}) / (\text{preoperative BMI} - 25)] \times 100$ (2)

%EWL = $[(\text{Preoperative weight} - \text{current weight}) / (\text{preoperative weight} - \text{ideal weight})] \times 100$



Langzeitresultate

Vergleich Sleeve zu RY-Magenbypass 5 Jahre



Table 4 Evidence summary comparing outcomes of Roux-en-y gastric bypass and sleeve gastrectomy to inform shared decision making

Outcome	Roux-en-y gastric bypass	Sleeve gastrectomy
Weight loss (% total weight loss)	1 year weight loss: 30.8-31.2% ^{17 42 48 52} ; 5 year weight loss: 23.2-27.2%	1 year weight loss: 23.4-28.2% ^{17 42 48 52} ; 5 year weight loss: 18.6-23.7%
Type 2 diabetes	5 year remission: 86.1%; 5 year relapse: 33.1% ⁴⁹	5 year remission: 83.5%; 5 year relapse: 41.6% ⁹
Hypertension	5 year remission: 17% ⁵³	5 year remission: 18% ⁵³
Dyslipidemia	4 year remission: 38.0% ⁵⁴	4 year remission: 28.0% ⁵⁴
Quality of life	Quality of life measures tend to improve after MBS, with greater improvements in physical health measures than mental health measures and no significant differences observed between RYGB and SG ^{55 58}	
Mortality	30 day all cause mortality: 0.15% ⁵⁹ ; 5 year mortality: 2.2-2.8% ^{60 61}	30 day all cause mortality: 0.07% ⁵⁹ ; 5 year mortality: 1.3-2.7% ^{60 61}
Reoperation	30 day reoperation: 2.2% ⁵⁹ ; 5 year reoperation: 12.3-22.8% ^{41 50 60}	30 day reoperation: 0.83% ⁵⁹ ; 5 year reoperation: 8.9-18.5% ^{41 50 60}
Readmission to hospital	30 day: 5.7% ⁵⁹ ; 5 year: 38.3-53.7% ^{50 60}	30 day: 2.9% ⁵⁹ ; 5 year: 32.8-43.7% ^{50 60}
Alcohol use disorder	5 year incidence: 9.2-20.8% (95% CI 18.5 to 23.3) ^{62 63}	5 year incidence: 7.9% (95% CI 6.4 to 9.5) ⁶²
Suicide	Operation specific data not available: 5 year incidence of suicide attempt after MBS: 3.6 per 1000 person years; 5 year incidence of suicide death after MBS: 3.8 per 10 000 person years ⁶⁴	

Langzeitresultate

Länge der Dünndarmschenkel >5 Jahre

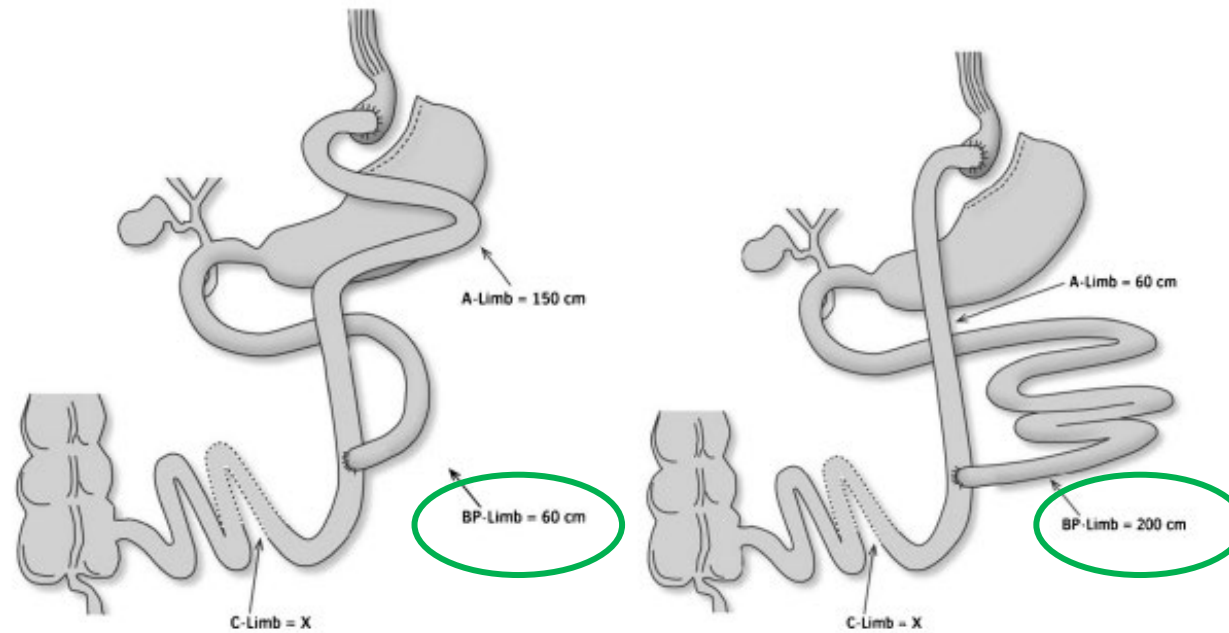


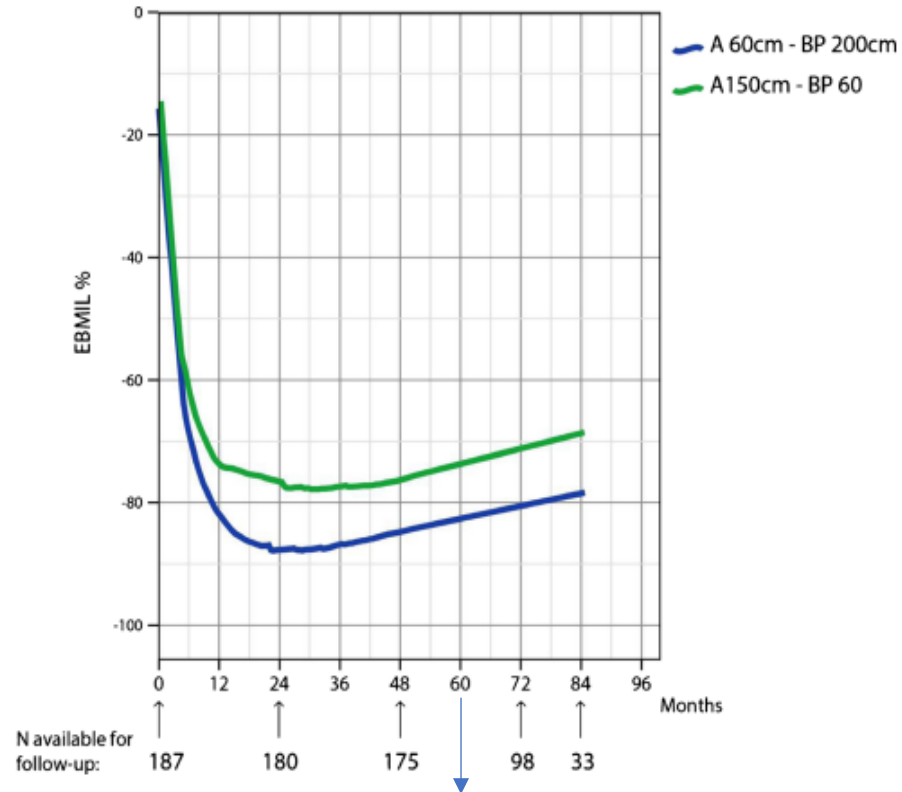
Fig. 1 Schematic drawing of the operation with 150-cm A-limb or 200-cm BP-limb

Gastric Bypass with Long Alimentary Limb or Long Pancreato-Biliary Limb—Long-Term Results on Weight Loss, Resolution of Co-morbidities and Metabolic Parameters

Langzeitresultate

Länge der Dünndarmschenkel >5 Jahre

Fig. 2 Postoperative weight loss expressed as percentage of excess BMI loss (EBMIL%) plotted against time. The lines are drawn using the locally weighted scatter plot smoothing method (Lowess). The figures demonstrate a greater weight loss using the long BP-limb procedure compared to long A-limb procedure



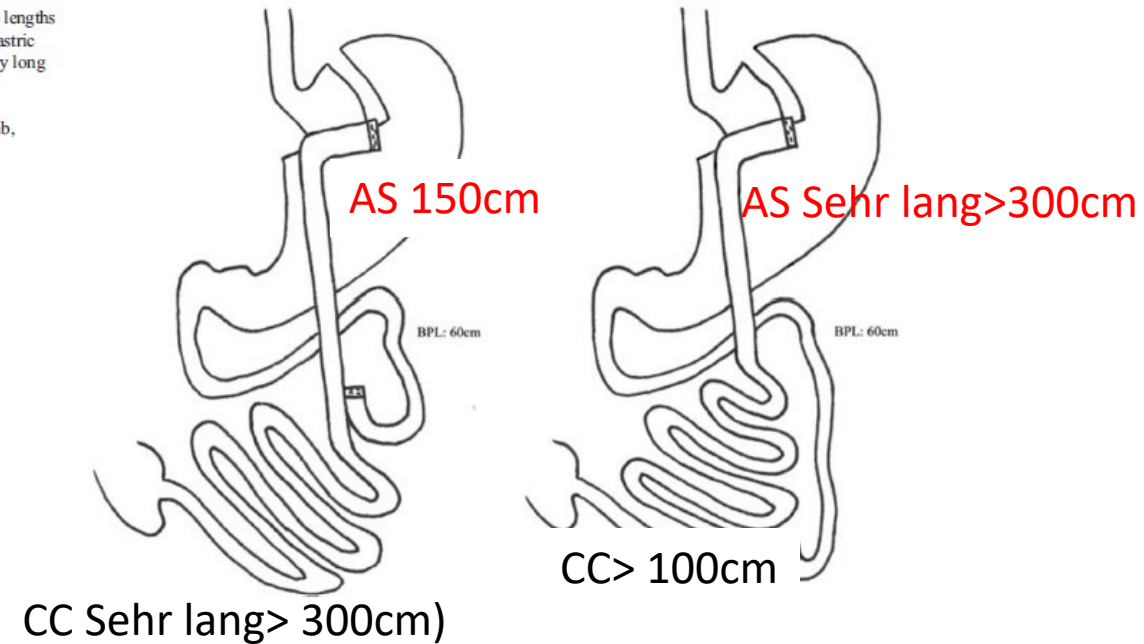
FU: 85%

Gastric Bypass with Long Alimentary Limb or Long Pancreato-Biliary Limb—Long-Term Results on Weight Loss, Resolution of Co-morbidities and Metabolic Parameters

Langzeitresultate

Länge der Dünndarmschenkel >5 Jahre

Fig. 1 Illustration of limb lengths in proximal Roux-en Y gastric bypass (left) and very-very long limb-RYGB (right).
AL = alimentary limb,
BPL = biliopancreatic limb,
CC = common channel



Long-Term Outcome of Proximal Versus Very-Very Long Limb Roux-en-Y Gastric Bypass: the Roux-Limb to Common Channel Ratio Determines the Long-Term Weight Loss

Langzeitresultate

Länge der Dünndarmschenkel >5 Jahre

Table 1 Patients characteristics

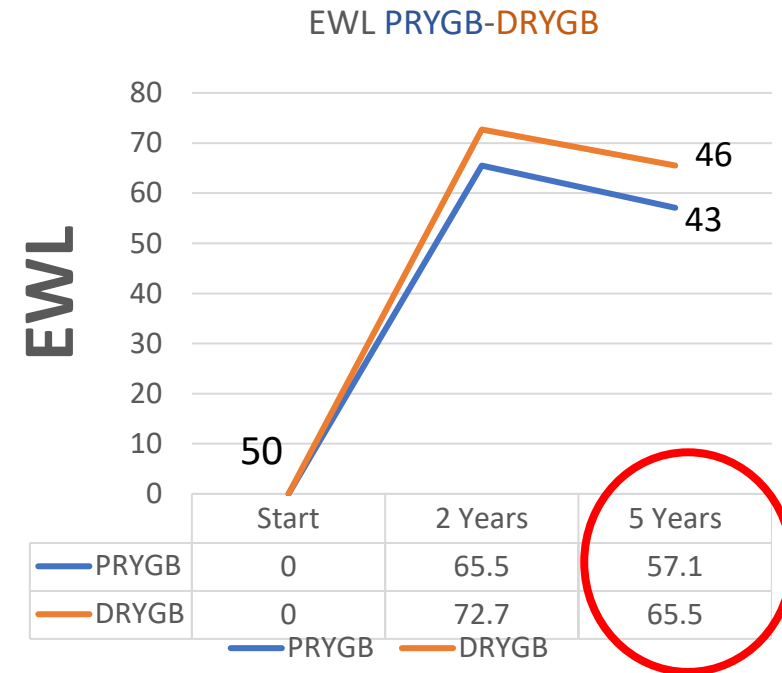
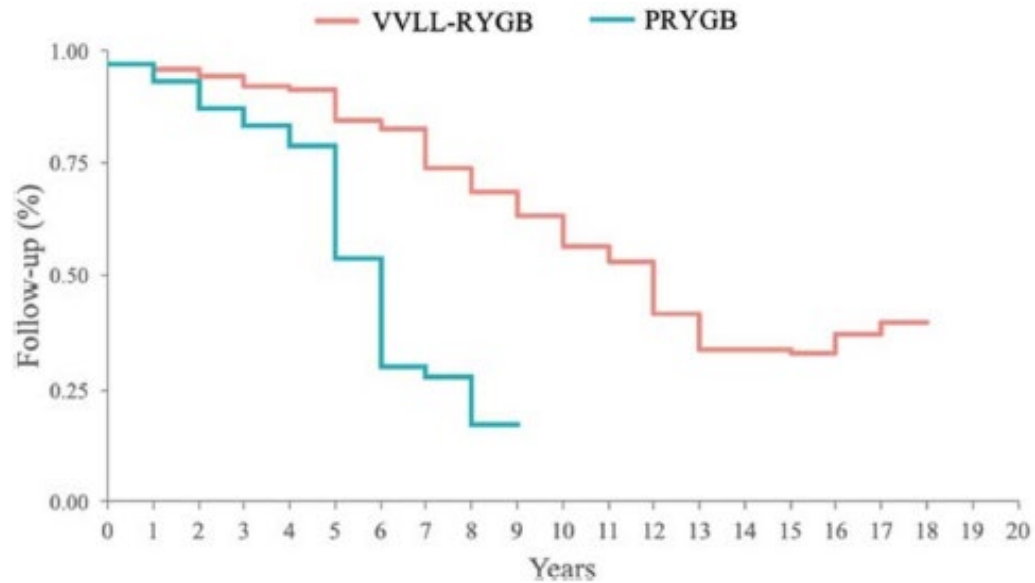
Variable	VVLL-RYGB	PRYGB	<i>p</i> Value
<i>n</i>	232	223	NA
Mean age at operation (SD)	41.1 (± 10)	38.5 (± 11)	0.008
Female gender (%)	171 (73.7)	187 (83.9)	0.049
Mean initial BMI (SD)	45.8 (± 6.3)	42.9 (± 4.9)	< 0.001
Diabetes/prediabetes (%)	62 (26.7)	33 (14.8)	0.016
OAD (%)	35 (15.2)	15 (6.7)	0.031
Insulin (%)	40 (17.3)	9 (4.0)	< 0.001
Hypertension (%)	108 (46.8)	81 (36.3)	0.097
Hypertensive drugs (%)	41 (17.7)	24 (10.8)	0.101
Hyperlipidemia (%)	53 (22.9)	39 (17.5)	0.148
Hyperlipidemia drugs (%)	41 (17.7)	24 (10.8)	0.101

SD standard deviation, *BMI* body mass index, *OAD* oral antidiabetic drugs

Long-Term Outcome of Proximal Versus Very-Very Long Limb
Roux-en-Y Gastric Bypass: the Roux-Limb to Common Channel Ratio
Determines the Long-Term Weight Loss

Langzeitresultate

Länge der Dünndarmschenkel >5 Jahre



Long-Term Outcome of Proximal Versus Very-Very Long Limb Roux-en-Y Gastric Bypass: the Roux-Limb to Common Channel Ratio Determines the Long-Term Weight Loss

Langzeitresultate

Länge der Dünndarmschenkel >5 Jahre

Table 2 Revisional procedures

Operation	Reason for revision	Revisional procedures
VVLL-RYGB	Insufficient weight loss = 15 6,4%	BPD-like RYGB = 3 Distalization = 3 Minimizer© banding = 9 Proximalization = 1 Reverse bypass = 1
	Malnutrition = 2 2,5%	Proximalization = 4 Minimizer©-banding = 1
	Steatorrhea, diarrhea = 4	Proximalization = 3
	Dumping syndrome = 1	BPD-like RYGB = 11 Distalization = 8 Minimizer© banding = 6 BPD-like RYGB and minimizer © banding = 1
	Abdominal pain = 3	Reverse bypass = 1
PRYGB	Insufficient weight loss = 26 11,6%	Reverse bypass = 1 Minimizer© banding = 1
	Malnutrition = 1	
	Malabsorption = 1	
	Dumping syndrome = 1	

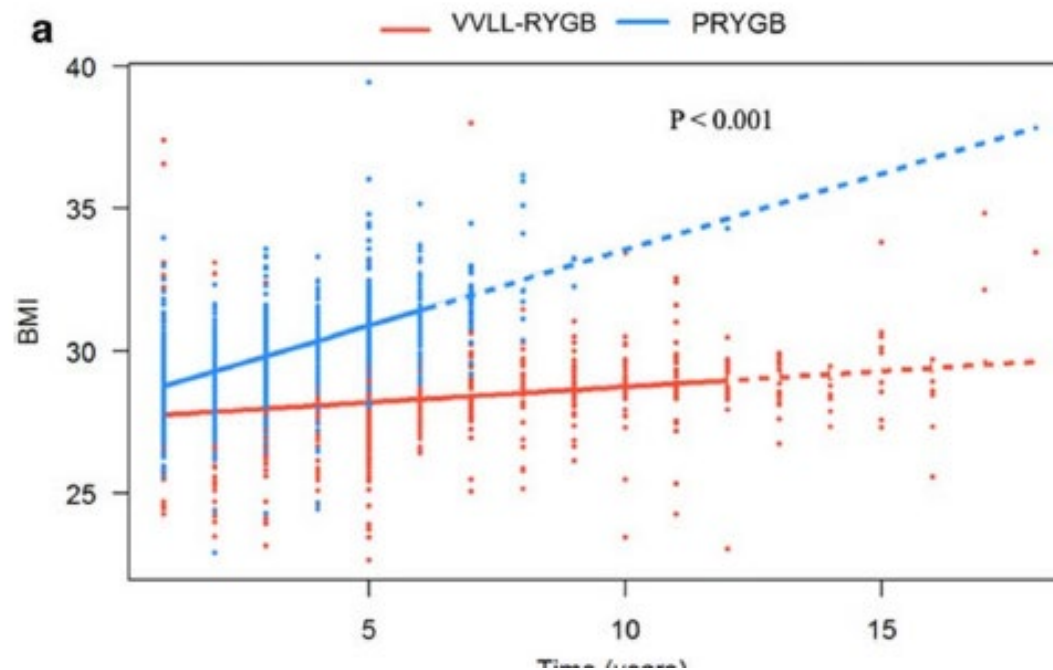
BPD-like RYGB biliopancreatic diversion-like Roux-en-Y gastric bypass

Insuffizienter Gewichtsverlust
(BMI>35, EWL<50%)

Long-Term Outcome of Proximal Versus Very-Very Long Limb
Roux-en-Y Gastric Bypass: the Roux-Limb to Common Channel Ratio
Determines the Long-Term Weight Loss

Langzeitresultate

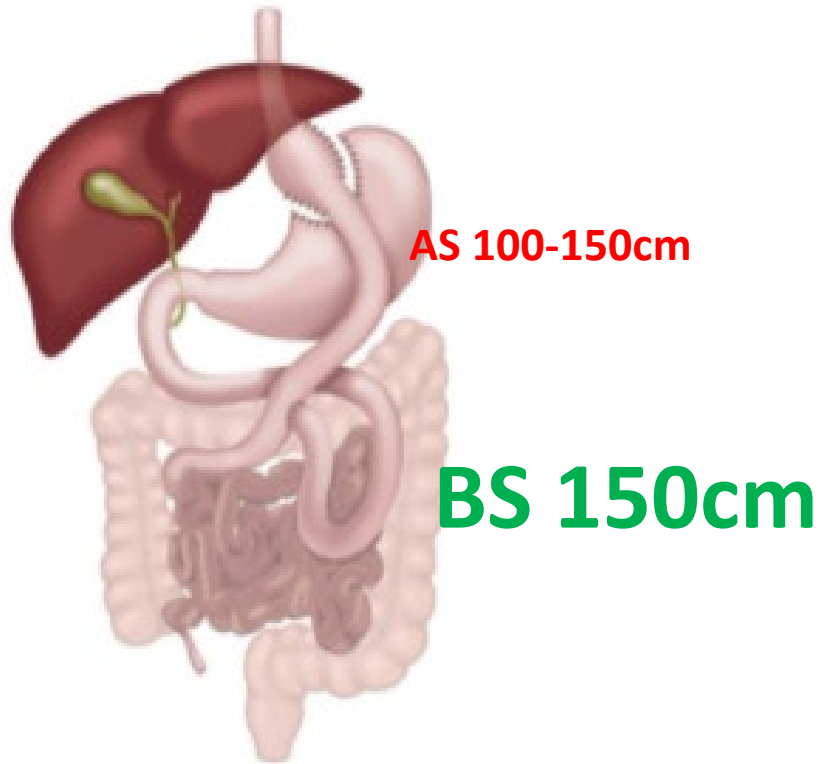
Länge der Dünndarmschenkel >5 Jahre



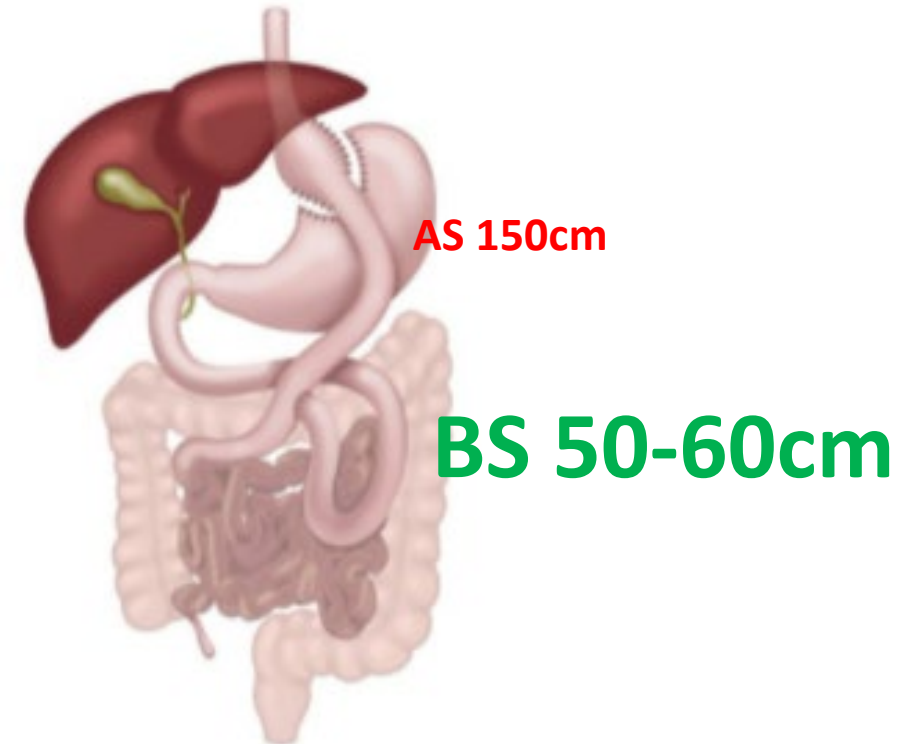
Long-Term Outcome of Proximal Versus Very-Very Long Limb
Roux-en-Y Gastric Bypass: the Roux-Limb to Common Channel Ratio
Determines the Long-Term Weight Loss

Langzeitresultate

Long BPL- RYGB



Short BPL- RYGB



Mid-term Outcomes in Primary Roux-en-Y Gastric Bypass Procedures with Short or Long Biliopancreatic Limb

Kurzzeitresultate

Länge der Dünndarmschenkel Follow up 2 Jahre

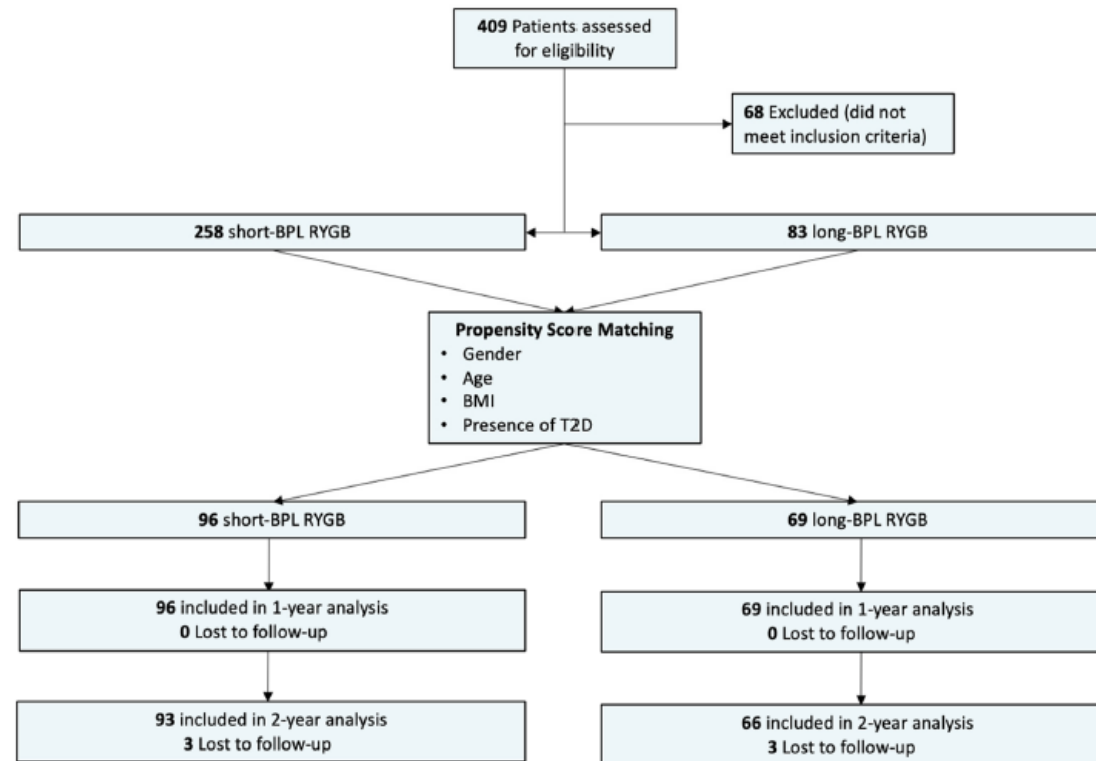


Fig. 2 Flow chart describing patient selection

Mid-term Outcomes in Primary Roux-en-Y Gastric Bypass Procedures with Short or Long Biliopancreatic Limb

Länge der Dünndarmschenkel Follow up 2 Jahre

Gewichtsverlust

Table 2 Weight loss parameters over the study period

	Short-BPL RYGB (n = 96)	Long-BPL RYGB (n = 69)	p value
Weight loss/BMI changes at 1 year			
BMI (kg/m ²)	28.57 (3.58)	27.86 (3.81)	0.22
Weight (kg)	78.48 (12.9)	78.83 (15.99)	0.87
Weight loss (kg)	36.42 (10.53)	44.85 (33.14)	0.021
BMI reduction (kg/m ²)	13.12 (3.85)	14.58 (4.58)	0.028
TWL (%)	31.57 (7.66)	33.86 (9.43)	0.088
Weight loss/BMI changes at 2 years			
BMI (kg/m ²)	28.3 (3.7)	27.82 (4.3)	0.46
Weight (kg)	77.96 (13.74)	78.86 (16.88)	0.71
Weight loss (kg)	36.9 (11.51)	40.25 (13.32)	0.092
BMI reduction (kg/m ²)	13.42 (4.06)	14.49 (4.95)	0.139
TWL (%)	32.04 (8.83)	33.78 (9.75)	0.242

Values are shown as median (standard deviation)

BMI body mass index, %TWL total weight loss

Mid-term Outcomes in Primary Roux-en-Y Gastric Bypass Procedures with Short or Long Biliopancreatic Limb

Kurzzeitresultate

Länge der Dünndarmschenkel Follow up 2 Jahre

Diabetes mellitus

Table 3 Diabetes parameters over the study period

	Short-BPL RYGB (n=96)	Long-BPL RYGB (n=69)	p value
Diabetes changes at 1 year			
Diabetes/prediabetes			0.06
Diabetes (%)	7 (7%)	12 (17%)	
Prediabetes (%)	8 (8%)	2 (3%)	
HbA1c (%)	5.16 (0.71)	5.25 (0.7)	0.43
ΔHbA1c (%)	0.79 (1.05)	1.5 (1.69)	0.001
Diabetes drugs			0.086
OAD (%)	2 (2%)	7 (10%)	
Insulin (%)	1 (1%)	2 (3%)	
Diabetes changes at 2 years			
Diabetes/prediabetes			0.19
Diabetes (%)	5 (5%)	9 (14%)	
Prediabetes (%)	8 (9%)	6 (9%)	
HbA1c (%)	5.22 (0.5)	5.28 (0.82)	0.60
ΔHbA1c (%)	0.72 (0.92)	1.51 (1.73)	<0.001
Diabetes drugs			0.031
OAD (%)	2 (2%)	6 (9%)	
Insulin (%)	0 (0%)	2 (3%)	

Values are shown as mean (standard deviation)

OAD oral antidiabetic drugs

Mid-term Outcomes in Primary Roux-en-Y Gastric Bypass Procedures with Short or Long Biliopancreatic Limb

Langzeitresultate

Gewichtsrebound nach proximalen RY-Magenbypass

Table 2. Observed Weight Regain by Time Since Reaching Nadir Weight

	Time Since Reaching Nadir Weight				
	1 y	2 y	3 y	4 y	5 y
Weight measured, No. (%)	1265 (100)	1133 (93)	1057 (92)	966 (90)	771 (78)
Weight measurement missing, No. (%)	0	78 (7)	85 (8)	101 (10)	166 (12)
Reasons ineligible for weight assessment, No.					
Pregnant at time point	21	10	14	14	10
Died prior to time point	0	4	5	7	12
Data collection ended prior to time point	0	61	125	198	327
Time since initial surgery, median (25th-75th percentile), y	3.0 (2.1-3.9)	3.8 (3.1-4.3)	4.6 (4.0-5.2)	5.3 (5.0-6.0)	6.0 (5.8-6.6)
Weight Regain Measures, Median (25th-75th Percentile)					
Weight, kg	4.5 (2.3-8.2)	8.2 (5.0-13.2)	10.4 (5.9-16.3)	11.8 (7.3-18.6)	12.7 (7.3-19.5)
Body mass index ^a	1.6 (0.8-2.8)	3.0 (1.7-4.6)	3.7 (2.2-5.8)	4.2 (2.6-6.7)	4.5 (2.7-6.8)
Percentage of presurgery weight	3.5 (1.7-6.1)	6.5 (3.8-9.7)	8.3 (4.8-12.2)	8.9 (5.7-14.0)	9.7 (6.0-14.4)
Percentage of nadir weight	5.7 (2.7-9.6)	10.1 (6.0-16.1)	12.9 (7.5-19.4)	14.2 (8.6-22.3)	15.0 (9.2-23.2)
Percentage of maximum weight lost	9.5 (4.7-17.2)	17.8 (10.2-27.3)	22.5 (12.9-34.5)	24.6 (16.1-39.4)	26.8 (16.7-41.5)
Clinically Important Weight Regain, No. (%)^b					
≥10 kg	205 (16.2)	441 (38.9)	542 (51.3)	551 (57.0)	474 (61.5)
≥5 body mass index points ^a	95 (7.5)	235 (20.7)	354 (33.5)	379 (39.2)	336 (43.6)
≥10% of presurgery weight	100 (7.9)	267 (23.6)	392 (37.1)	420 (43.5)	376 (48.8)
≥10% of nadir weight	297 (23.5)	576 (50.8)	676 (64.0)	669 (69.3)	559 (72.5)
≥15% of nadir weight	125 (9.9)	325 (28.7)	422 (39.9)	453 (46.9)	387 (50.2)
≥10% of maximum weight lost	604 (47.8)	859 (75.8)	880 (83.3)	839 (86.9)	667 (86.5)
≥20% of maximum weight lost	235 (18.6)	492 (43.4)	599 (56.7)	612 (63.4)	519 (67.3)
≥25% of maximum weight lost	148 (11.7)	340 (30.0)	465 (44.0)	476 (49.3)	427 (55.4)

^a Calculated as weight in kilograms divided by height in meters squared.

Comparison of the Performance of Common Measures of Weight Regain After Bariatric Surgery for Association With Clinical Outcomes

Langzeitresultate

Gewichtsverlust >5 Jahre

OBES SURG (2019) 29:1583–1592

1587

Table 4 Weight loss trends with different procedures

Procedure	SG			RYGB			OAGB			<i>p</i>
	Med	Mean ± SD	<i>N</i>	Med	Mean ± SD	<i>N</i>	Med	Mean ± SD	<i>N</i>	
%TWL 1 year	26.73	27.20 ± 8.82	4416	27.56	27.43 ± 7.75	2478	29.42	28.88 ± 8.85	1053	< 0.001
%TWL 2 years	28.49	28.98 ± 7.89	2910	29.57	29.19 ± 7.05	1530	32.45	32.58 ± 8.35	848	< 0.001
%TWL 3 years	28.71	29.03 ± 8.62	3314	29.99	29.80 ± 7.14	1838	33.33	33.37 ± 8.53	643	< 0.001
%TWL 5 years	24.05	24.36 ± 9.68	1943	27.82	27.02 ± 8.24	1092	32.62	32.53 ± 7.66	203	< 0.001
%EWL 1 year	70.24	68.29 ± 24.73	4416	64.06	64.73 ± 17.76	2478	72.35	68.28 ± 16.85	1053	< 0.001
%EWL 2 years	72.39	72.43 ± 17.79	2910	70.47	69.21 ± 12.22	1530	79.41	76.24 ± 12.72	848	< 0.001
%EWL 3 years	68.78	71.07 ± 22.07	3314	68.54	69.86 ± 17.42	1838	79.01	76.70 ± 17.63	643	< 0.001
%EWL 5 years	57.28	58.96 ± 24.45	1943	60.85	62.12 ± 22.13	1092	70.37	72.96 ± 19.37	203	< 0.001
Nadir BMI	29.06	29.80 ± 4.72	4642	30.11	30.73 ± 4.17	2549	28.70	29.40 ± 3.56	1069	< 0.001

BMI, body mass index; *Hb*, haemoglobin; *TWL*, total weight loss; *EWL*, excess weight loss; *WR*, weight regain; *SD*, standard deviation; *SG*, sleeve gastrectomy; *RYGB*, Roux-en-Y gastric bypass; *OAGB*, one anastomosis gastric bypass; *Med*, median



Weight Regain After Bariatric Surgery—A Multicentre Study of 9617 Patients from Indian Bariatric Surgery Outcome Reporting Group

Sarfaraz J. Baig¹ · Pallawi Priya¹ · Kamal K. Mahawar² · Sumeet Shah³ · for the Indian Bariatric Surgery Outcome Reporting (IBSOR) Group

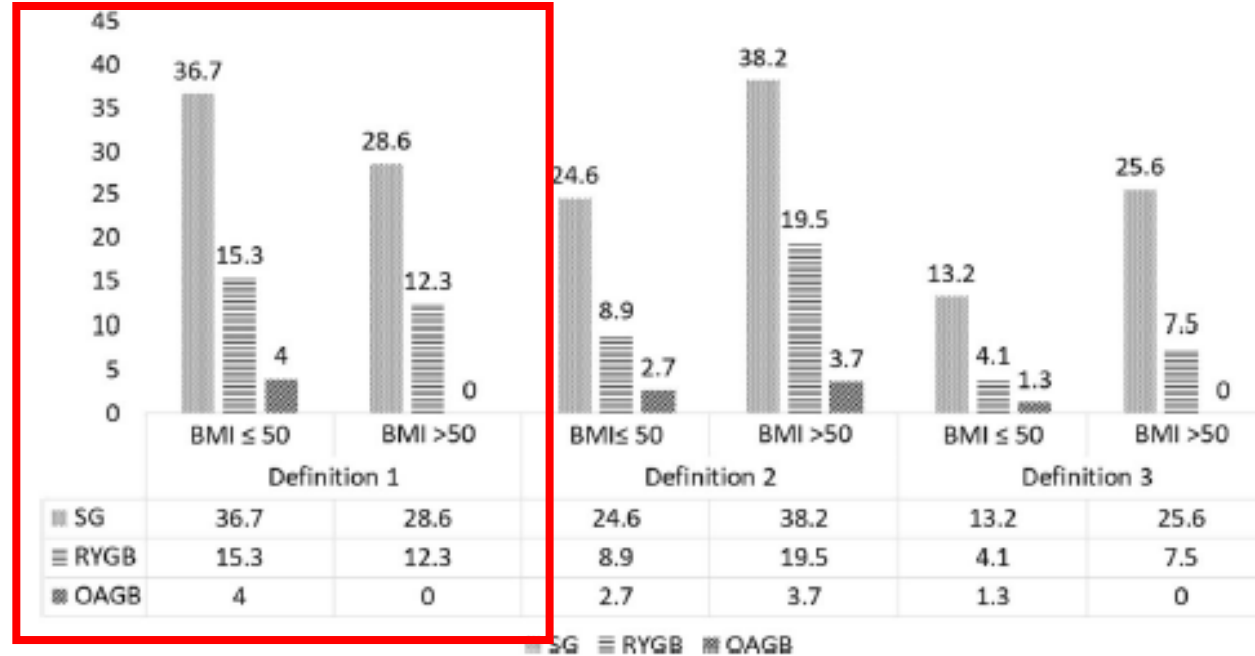
Langzeitresultate

Gewichtsverlust >5 Jahre

Definition 1: Regain of more than 25% of lost weight from the nadir weight [12, 15]

Definition 2: Regain of more than 10 kg from the nadir weight [16–21]

Definition 3: Regain of more than 5 BMI points from the nadir weight [12, 22]



Weight Regain After Bariatric Surgery—A Multicentre Study of 9617 Patients from Indian Bariatric Surgery Outcome Reporting Group

Sarfaraz J. Baig¹ · Pallawi Priya¹ · Kamal K. Mahawar² · Sumeet Shah³ · for the Indian Bariatric Surgery Outcome Reporting (IBSOR) Group

Länge der Dünndarmschenkel Follow up 3 Jahre

Umwandlung
Sleeve
in Magenbypass

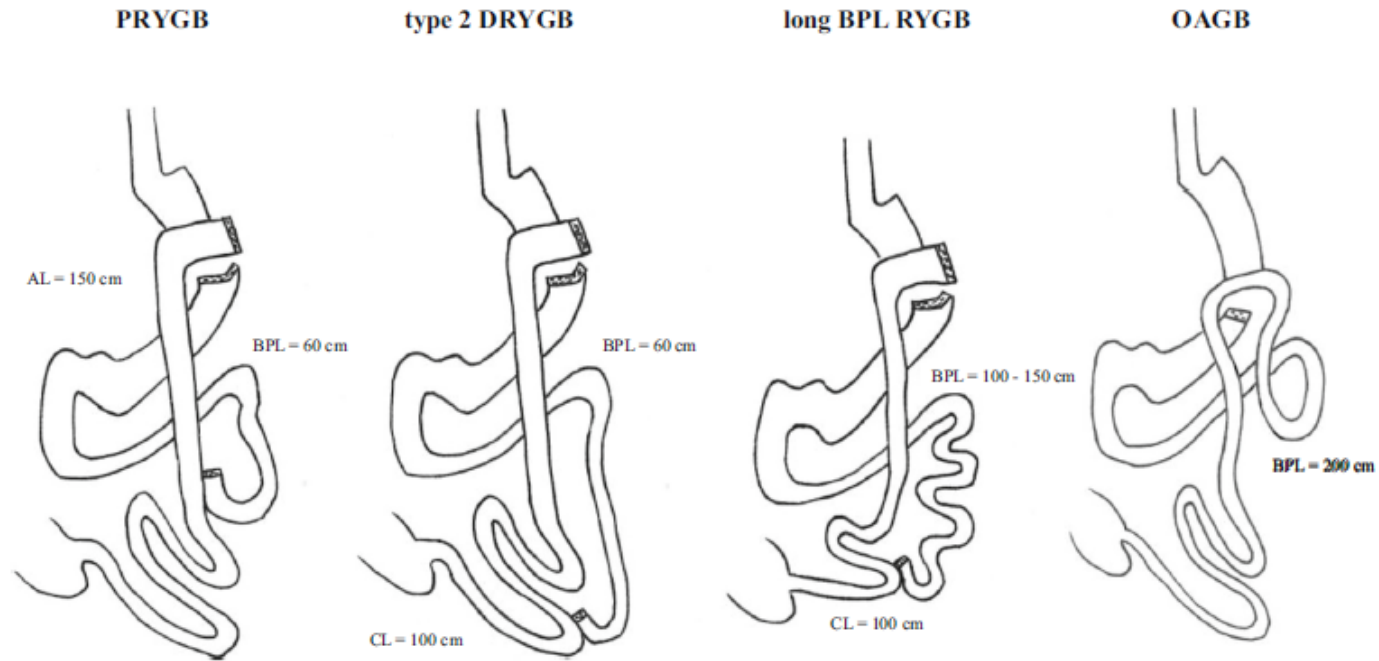


Fig. 1 Schematic illustration of different revisional procedures offered to patients with failed sleeve gastrectomy, PRYGB, proximal Roux-en-Y gastric bypass; type 2 DRYGB, type 2 distal Roux-en-Y gastric bypass;

long BPL RYGB, long biliopancreatic limb Roux-en-Y gastric bypass; OAGB, one anastomosis gastric bypass; AL, alimentary limb; BPL, biliopancreatic limb; CL = common limb

Short or Long Biliopancreatic Limb Bypass as a Secondary Procedure
After Failed Laparoscopic Sleeve Gastrectomy

Länge der Dünndarmschenkel Follow up 3 Jahre

Umwandlung
Sleeve
in Magenbypass

Table 3 Postoperative weight loss over the study period

	PRYGB (n = 12)	Type 2 DRYGB (n = 8)	Long BPL RYGB (n = 20)	OAGB (n = 12)
Weight loss/BMI changes at 1 year				
BMI (kg/m ²)	25.8 (24.4–28.2)	29.6 (26.6–36.4)	31.8 (27.6–38.0)	33.0 (27.1–40.9)
Additional ΔBMI (kg/m ²)	4.1 (2.6–5.3)* p = 0.006	5.2 (2.7–6.0) p = 0.115	8.4 (7.1–11.3)* p < 0.001	7.5 (5.3–11.9)* p < 0.001
Additional EWL (%)	23.7 (16.8–30.9)* p = 0.018	28.5 (14.0–32.4)* p = 0.074	33.8 (26.6–40.6)* p < 0.001	27.2 (20.7–44.6)* p < 0.001
TWL (%)	36.4 (33.0–39.8)* p = 0.006	29.6 (24.9–37.7)* p = 0.115	39.8 (31.4–44.7)* p < 0.001	37.6 (29.5–42.9)* p < 0.001
Weight loss/BMI changes at 2 years				
BMI (kg/m ²)	26.6 (24.8–28.7)	31.5 (27.8–36.2)	31.7 (24.4–37.8)	32.4 (26.5–40.8)
Additional ΔBMI (kg/m ²)	3.9 (1.7–5.5)* p = 0.028	4.2 (2.1–5.6) p = 0.208	10.3 (8.5–15.3)* p < 0.001	9.8 (5.7–12.2)* p < 0.001
Additional EWL (%)	23.1 (9.9–30.6)* p = 0.038	20.7 (9.1–30.1) p = 0.142	38.2 (30.2–51.7)* p < 0.001	38.7 (20.6–49.3)* p < 0.001
TWL (%)	36.6 (30.8–39.8)* p = 0.021	28.9 (23.3–36.4) p = 0.093	42.4 (33.7–53.0)* p < 0.001	36.3 (30.0–44.2)* p < 0.001
Weight loss/BMI changes at 3 years				
BMI (kg/m ²)	29.5 (24.8–28.7)	30.8 (27.9–35.7)	34.5 (29.2–35.8)	34.6 (29.6–36.8)
Additional ΔBMI (kg/m ²)	4.3 (1.7–5.5) p = 0.146	4.6 (1.5–5.6) p = 0.245	8.0 (5.8–16.0)* p < 0.001	9.4 (5.5–11.9)* p < 0.001
Additional EWL (%)	23.7 (9.9–30.6) p = 0.373	21.8 (6.3–27.0) p = 0.156	33.8 (19.9–44.5)* p < 0.001	33.2 (20.3–45.6)* p < 0.001
TWL (%)	31.3 (30.8–39.8) p = 0.122	31.6 (21.5–37.3) p = 0.121	45.0 (36.8–50.8)* p < 0.001	34.9 (32.7–40.7)* p < 0.001

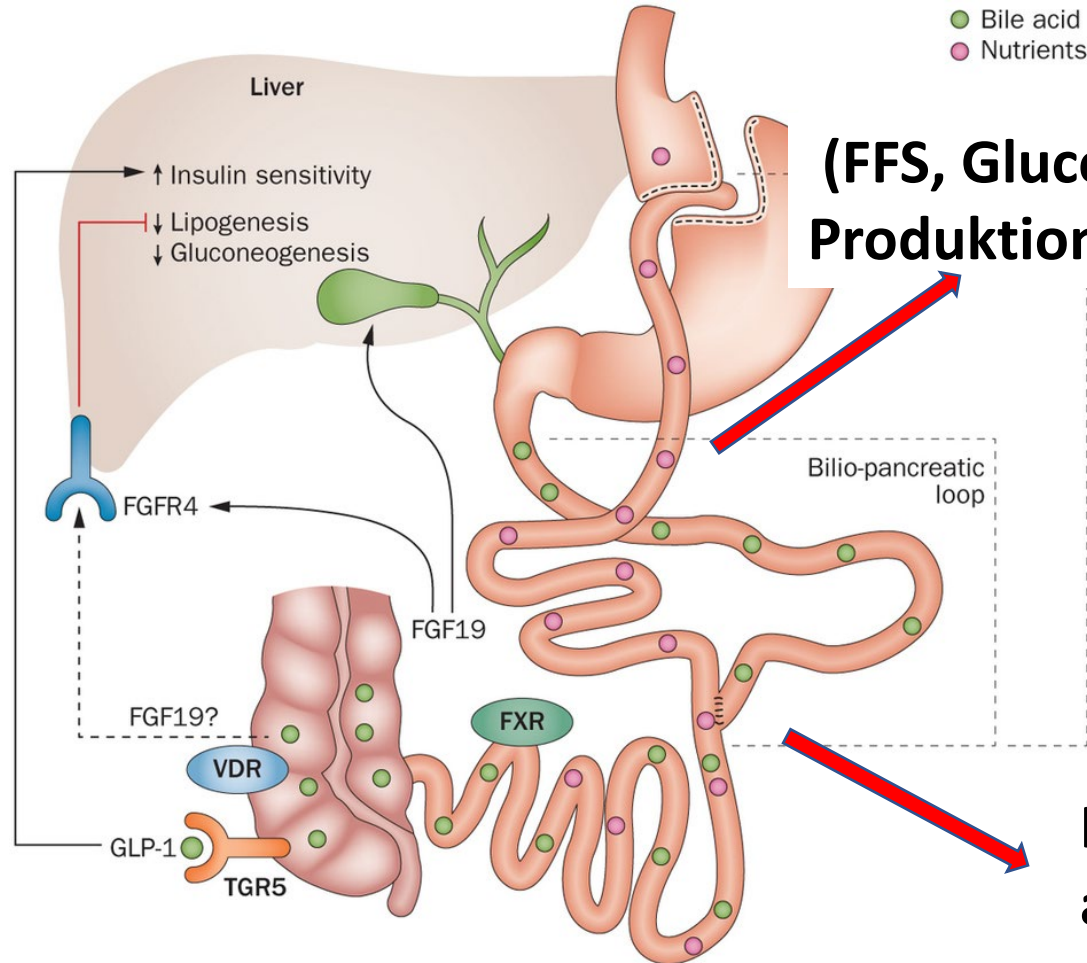
BMI body mass index; %EWL excess weight loss; %TWL total weight loss

*p < 0.05 compared with preoperative

Values are shown as median (95% CI)

Short or Long Biliopancreatic Limb Bypass as a Secondary Procedure
After Failed Laparoscopic Sleeve Gastrectomy

Langer biliärer Schenkel und GLP-1 Konzentration?



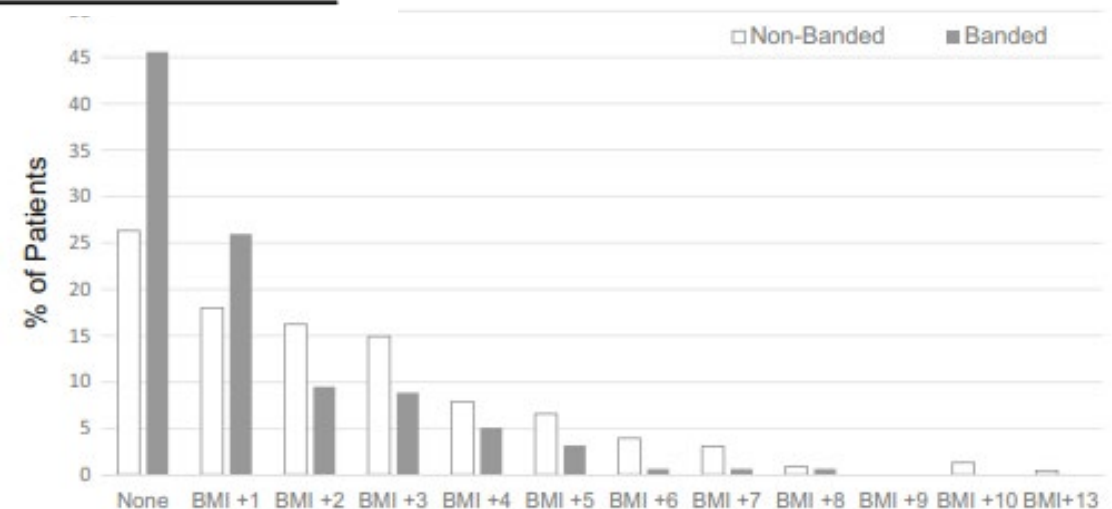
Langzeitresultate

Gewichtsrebound nach proximalen RY-Magenbypass nach 5 Jahren

254 432 FU 5 Jahre 88,2%

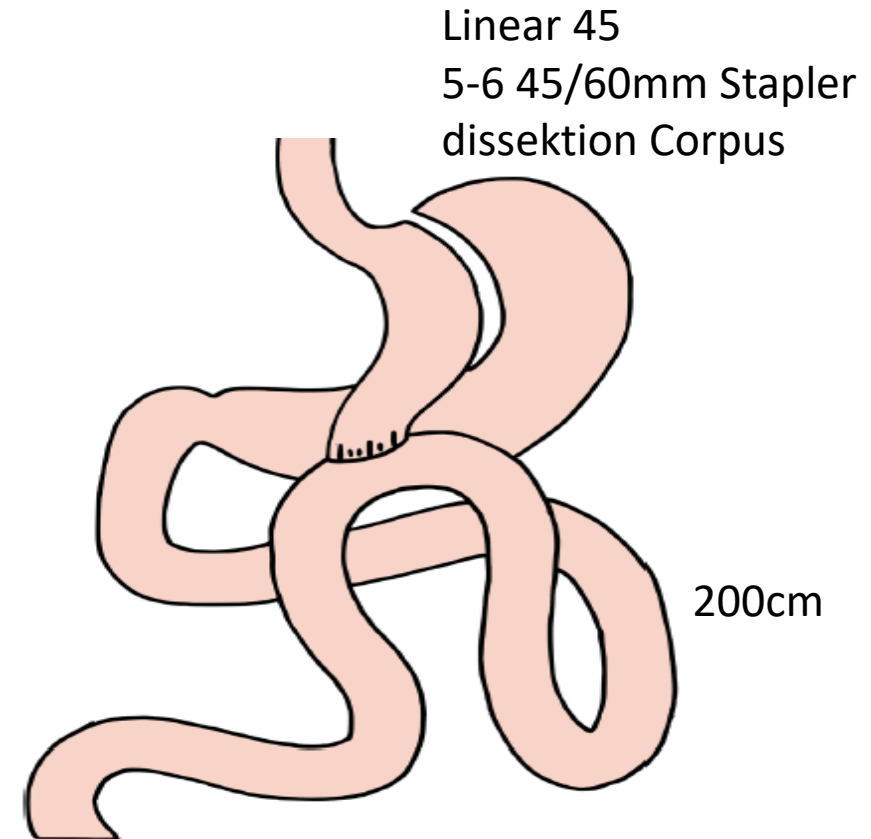
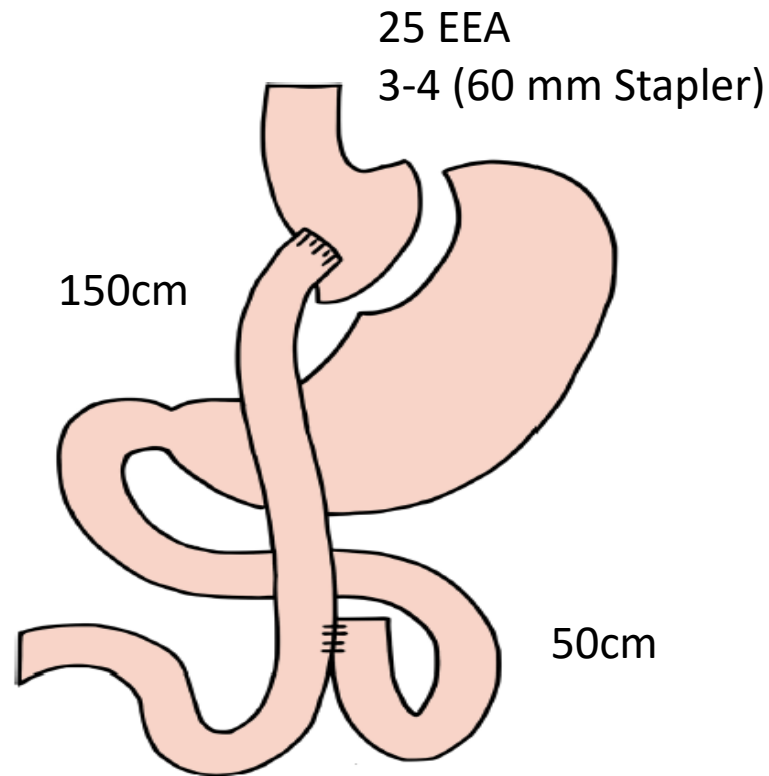
Table 2 Mixed ANOVA-weight loss, % excess weight loss, and BMI

Parameter	Time point (months)	Non-banded	Banded	Significance	P value
Weight loss	3-12	38.8 ± 11.2	44.2 ± 10.5	T, T*tr	≤0.0001
	24-60	35.4 ± 12.5	43.9 ± 11.9	T, T*tr, tr	≤0.0001
%EWL	3-12	71.9 ± 18.2	75.2 ± 13.9	T, T*tr	≤0.0465
	24-60	65.2 ± 20.0	74.0 ± 15.1	T, T*tr	<0.0001
BMI	0-12	26.6 ± 4.5	26.3 ± 3.5	T, T*tr, tr	≤0.0002
	24-60	27.8 ± 4.9	26.4 ± 3.6	T, T*tr	<0.0001
Weight regain ^a	60	2.3 ± 2.3	1.2 ± 1.5	NA	<0.0001



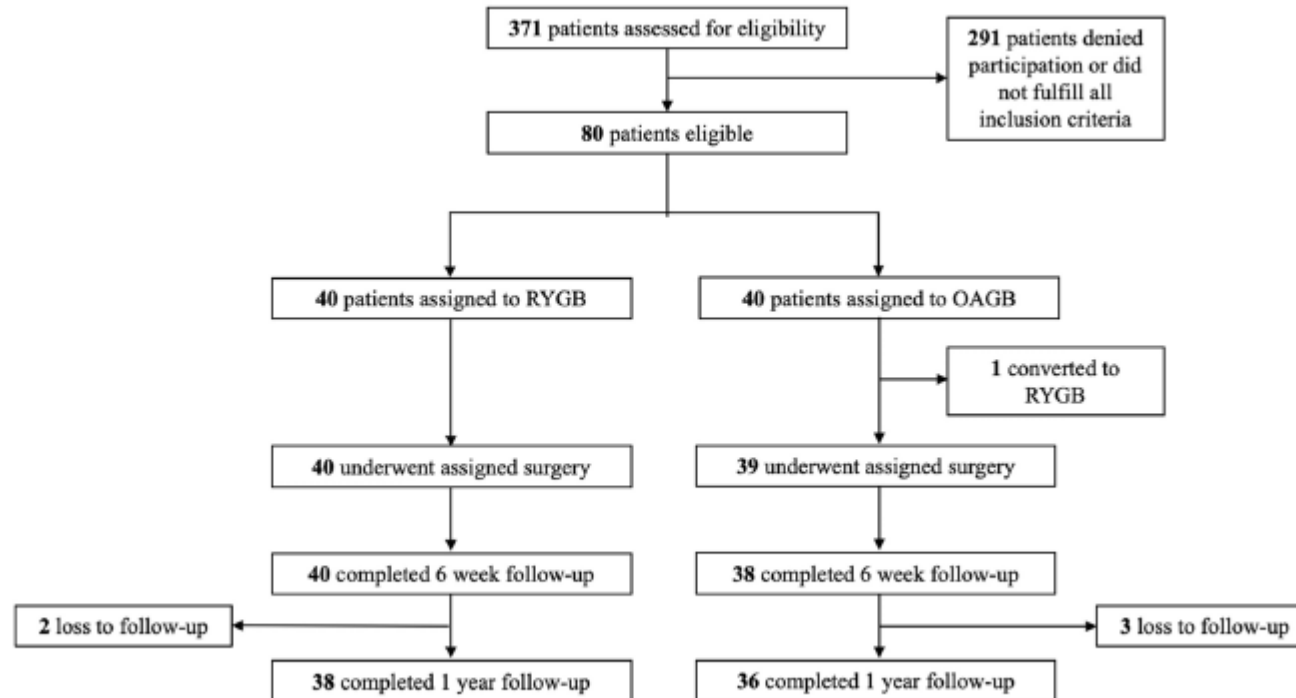
Banded Gastric Bypass: Better Long-Term Results? A Cohort Study with Minimum 5-Year Follow-Up

Omega vs proximalen RY- Magenbypass



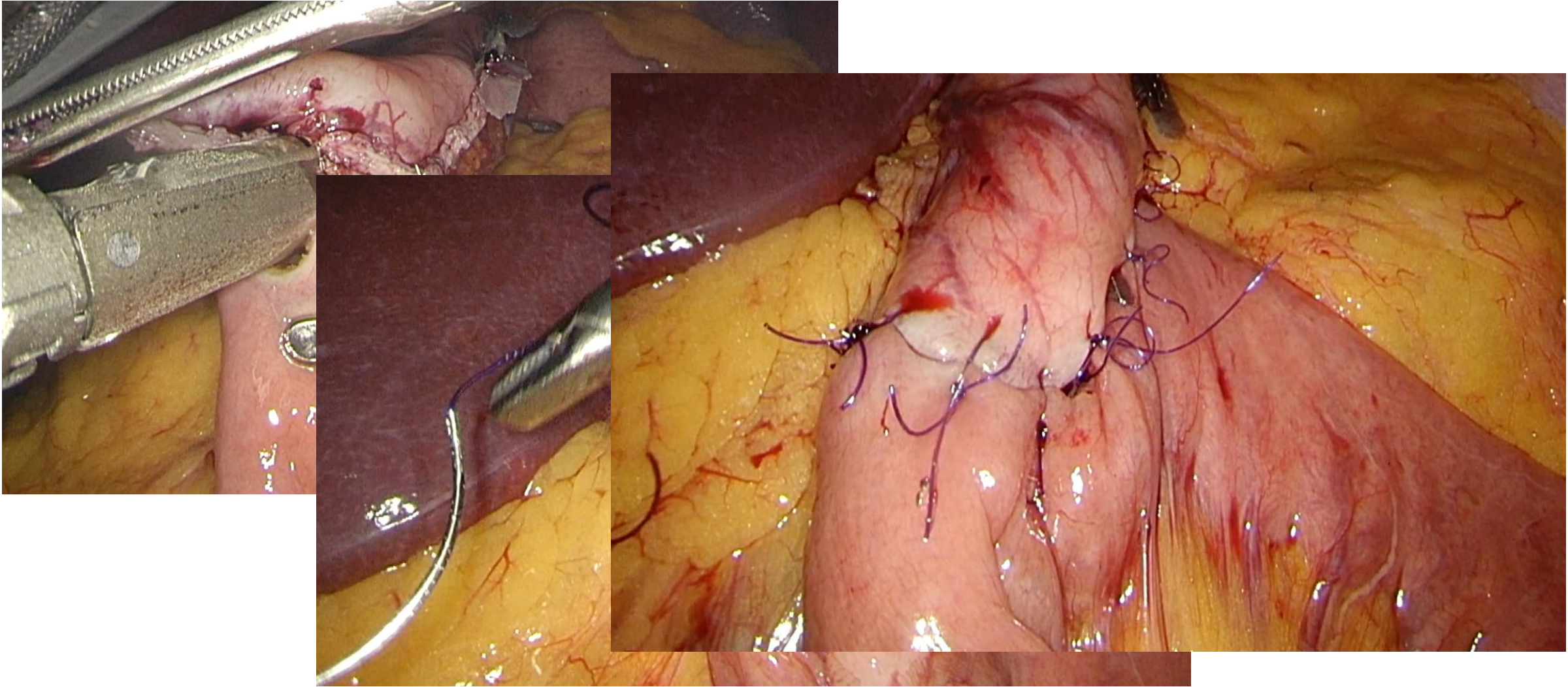
Laparoscopic Roux-Y-gastric bypass versus laparoscopic one-anastomosis gastric bypass for obesity: clinical & metabolic results of a prospective randomized controlled trial

Omega vs proximalen RY- Magenbypass

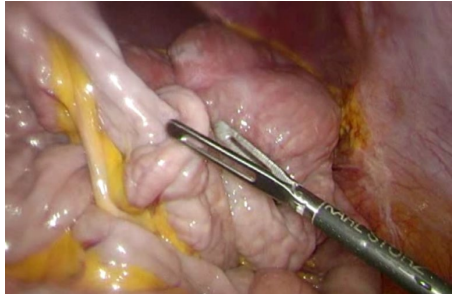


Laparoscopic Roux-Y-gastric bypass versus laparoscopic one-anastomosis gastric bypass for obesity: clinical & metabolic results of a prospective randomized controlled trial

Omega Magenbypass



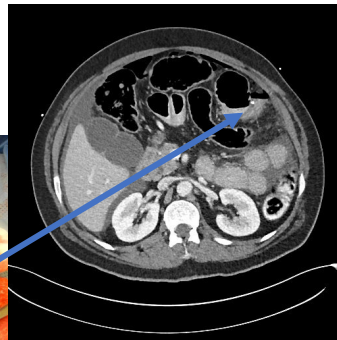
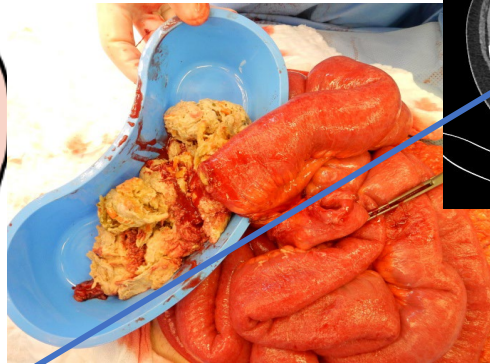
Invagination



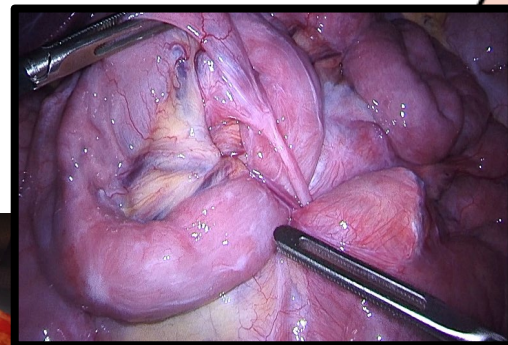
Biliärer Reflux



Bezoare

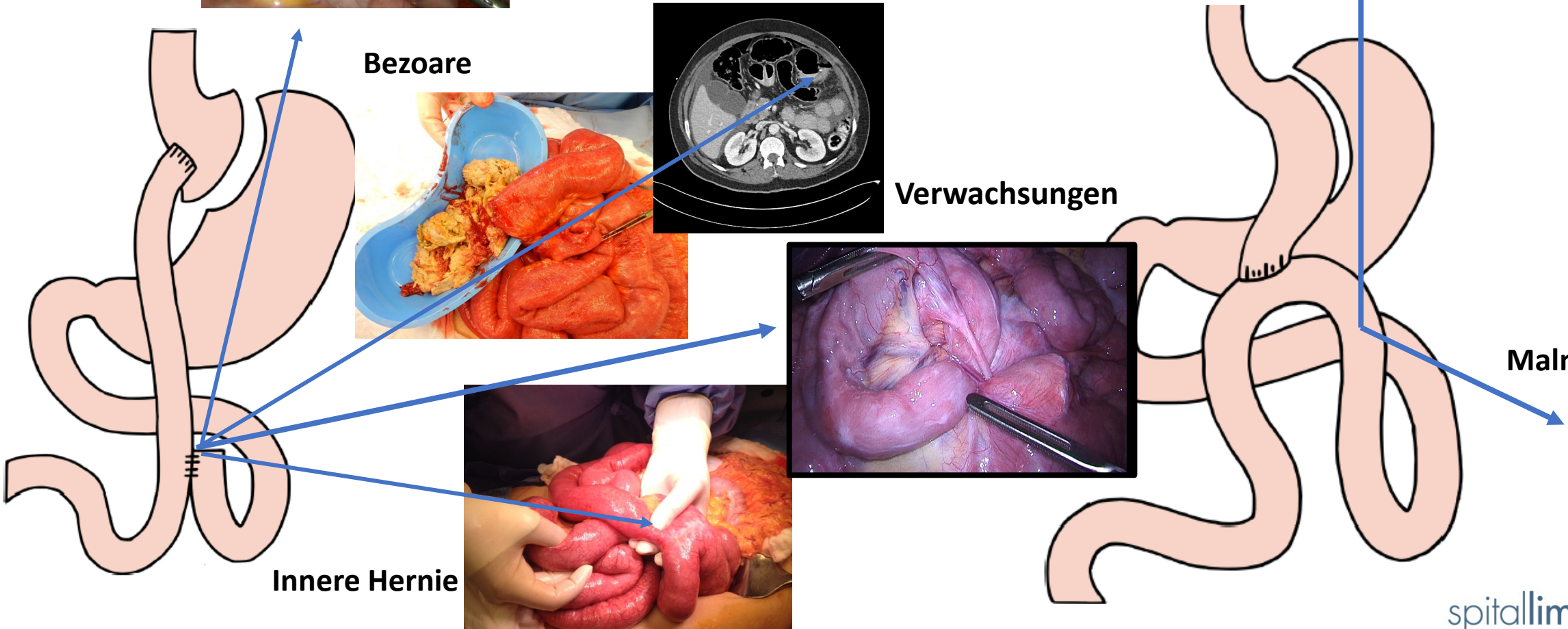
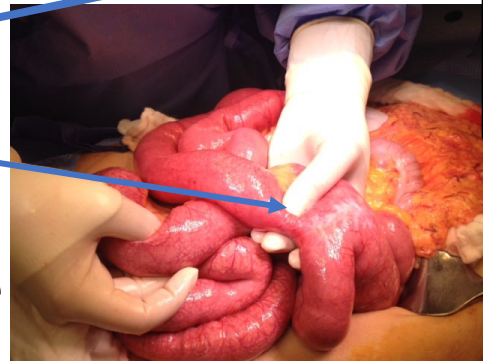


Verwachsungen



Malnutrition

Innere Hernie



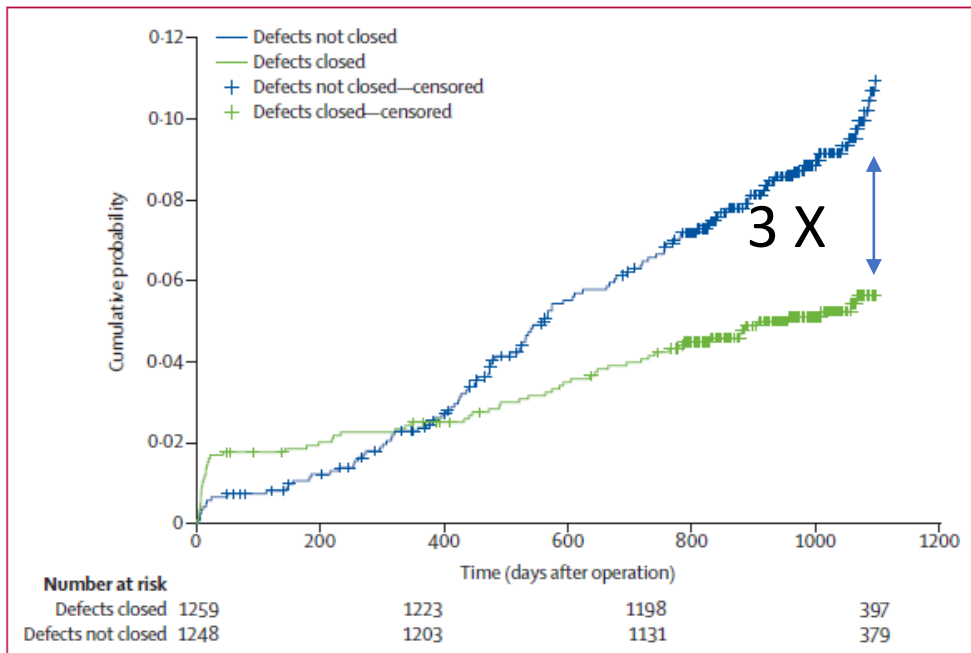


Figure 2: Cumulative probability of reoperation because of small bowel obstruction

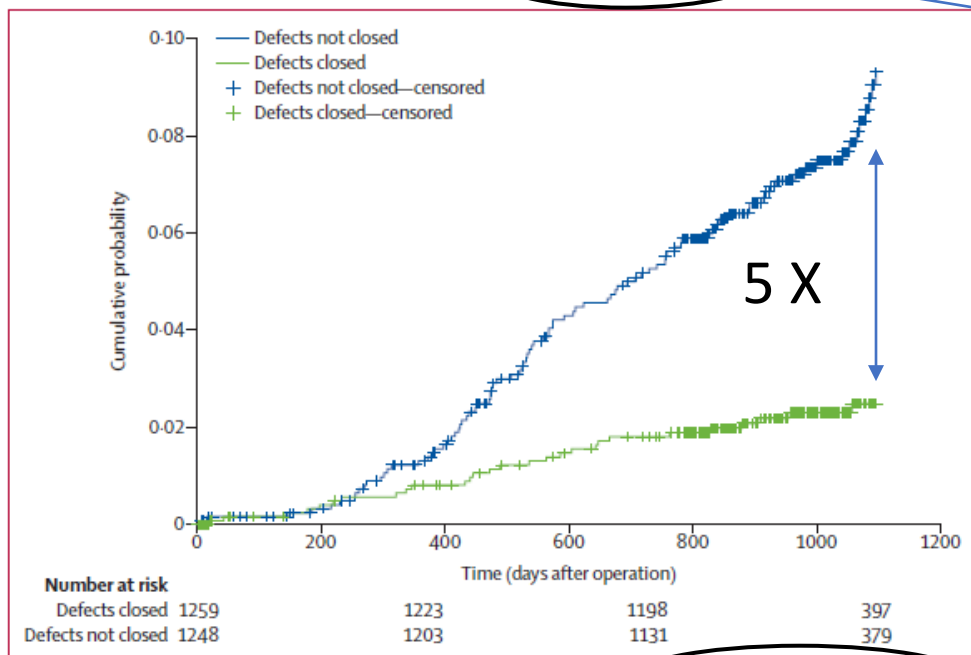


Figure 3: Cumulative probability of reoperation because of small bowel obstruction due to internal hernia

Closure of mesenteric defects in laparoscopic gastric bypass: a multicentre, randomised, parallel, open-label trial

Erik Stenberg, Eva Szabo, Göran Ågren, Johan Ottosson, Richard Mark, Hans Lönroth, Lars Boman, Anders Magnuson, Anders Thorell, Ingmar Näslund

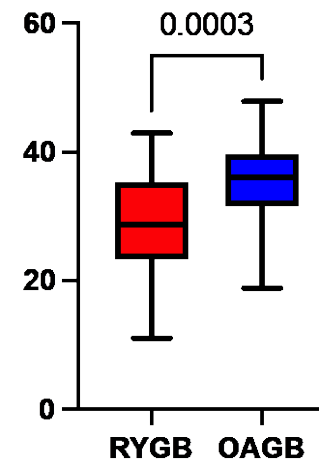
	Days 0-30		After day 30	
	Defects not closed	Defects closed	Defects not closed	Defects closed
Kinking of jejunojejunostomy/narrow anastomosis	3	16	2	0
Internal hernia	2	1	89	27
Beneath jejunojejunostomy	2	1	58	18
Petersen's space	0	0	24	8
Combined or undefined internal hernia	0	0	7	1
Adhesions	2	2	7	11
Incisional hernia	1	2	1	0
Intussusception	0	0	2	4
Unknown reason	0	0	1	1

Table 3: Causes of small bowel obstruction

Omega vs Proximalen RY- Magenbypass

	RYGB	Omega	P
%TWL 1 Jahr	31.5 (7.1)	37.4 (6.1)	0.0004
%TWL 3 Jahre	28.8 (7.7)	35.4 (6.8)	0.0003

%TWL 3 years (mean, SD)

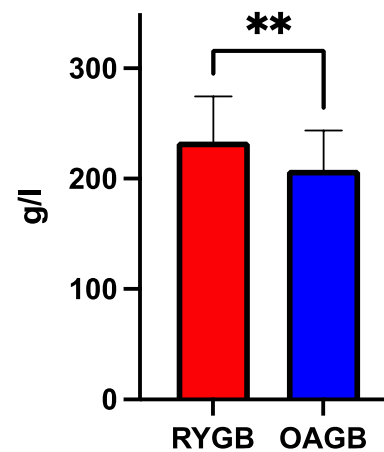


Laparoscopic Roux-Y-gastric bypass versus laparoscopic one-anastomosis gastric bypass for obesity: clinical & metabolic results of a prospective randomized controlled trial

Omega vs Proximalen RY- Magenbypass

Mean prealbumin (g/d) (SD)

	RYGB	OAGB	P
Baseline	307 (34.2)	313 (45.6)	0.556
1 Jahr	257 (57.7)	212 (65.2)	0.003
3 Jahre	234 (40.9)	208 (35.6)	0.008



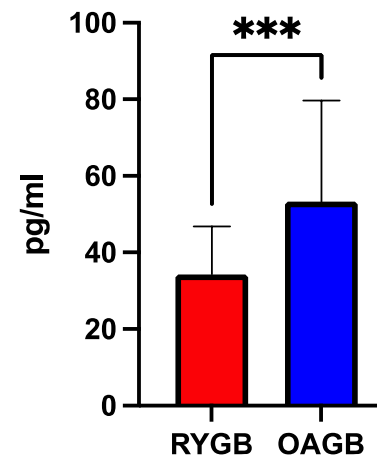
Laparoscopic Roux-Y-gastric bypass versus laparoscopic one-anastomosis gastric bypass for obesity: clinical & metabolic results of a prospective randomized controlled trial

Omega vs Proximalen RY- Magenbypass

Mean Parathormon (pg/ml) (SD)

	RYGB	OAGB	P
Baseline	39 (13.5)	44 (15.3)	0.353
1 Jahr	28 (11.6)	38 (16.5)	0.005
3 Jahre	34 (12.5)	53 (26.5)	0.001

Parathormon 3 Jahre postoperativ

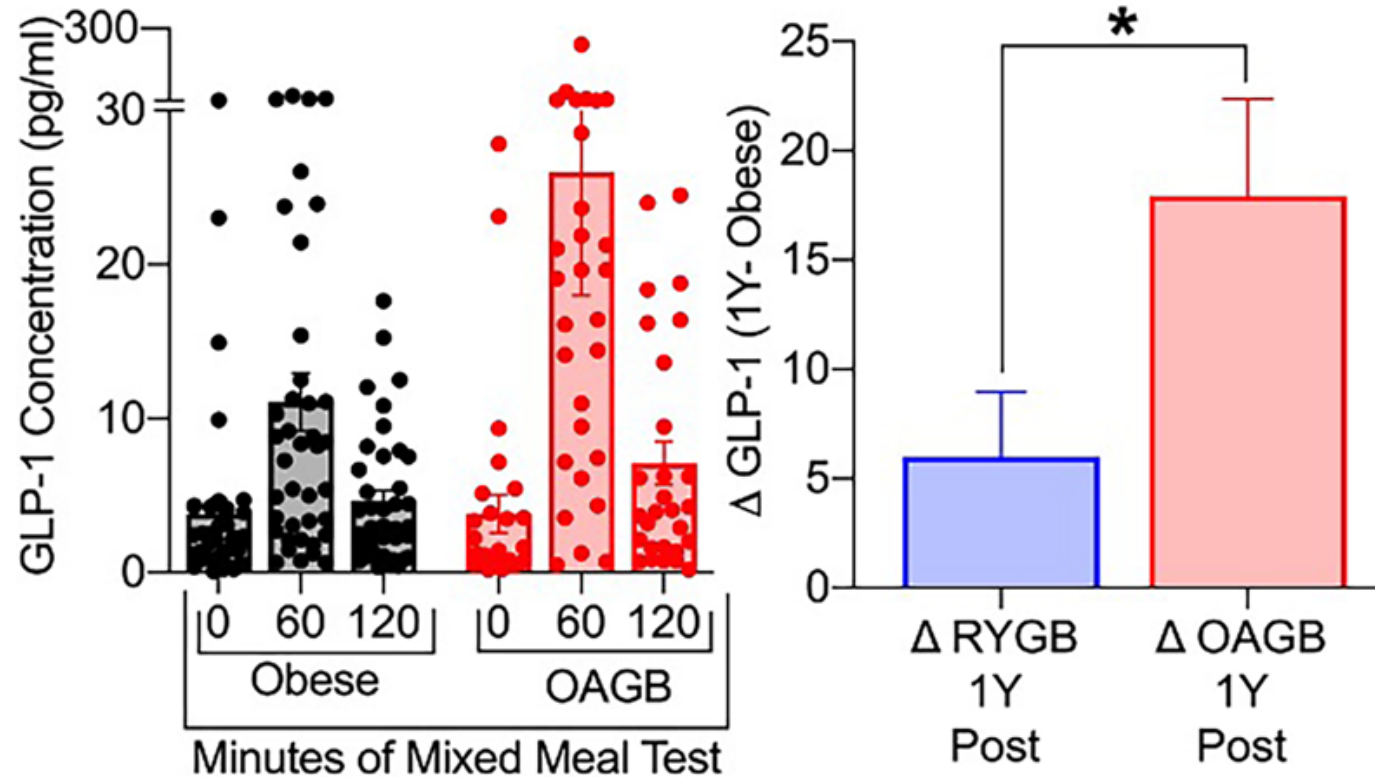


Laparoscopic Roux-Y-gastric bypass versus laparoscopic one-anastomosis gastric bypass for obesity: clinical & metabolic results of a prospective randomized controlled trial

Tarik Delko^{1,2,7} · Marko Kraljević¹ · Ioannis I. Lazaridis^{1,2} · Thomas Köstler¹ · Anne Jomard^{3,4} · Amy Taheri^{3,5} · Thomas A. Lutz⁵ · Elena Osto^{3,4,6} · Urs Zingg¹

Omega vs proximalen RY- Magenbypass nach 1 Jahr

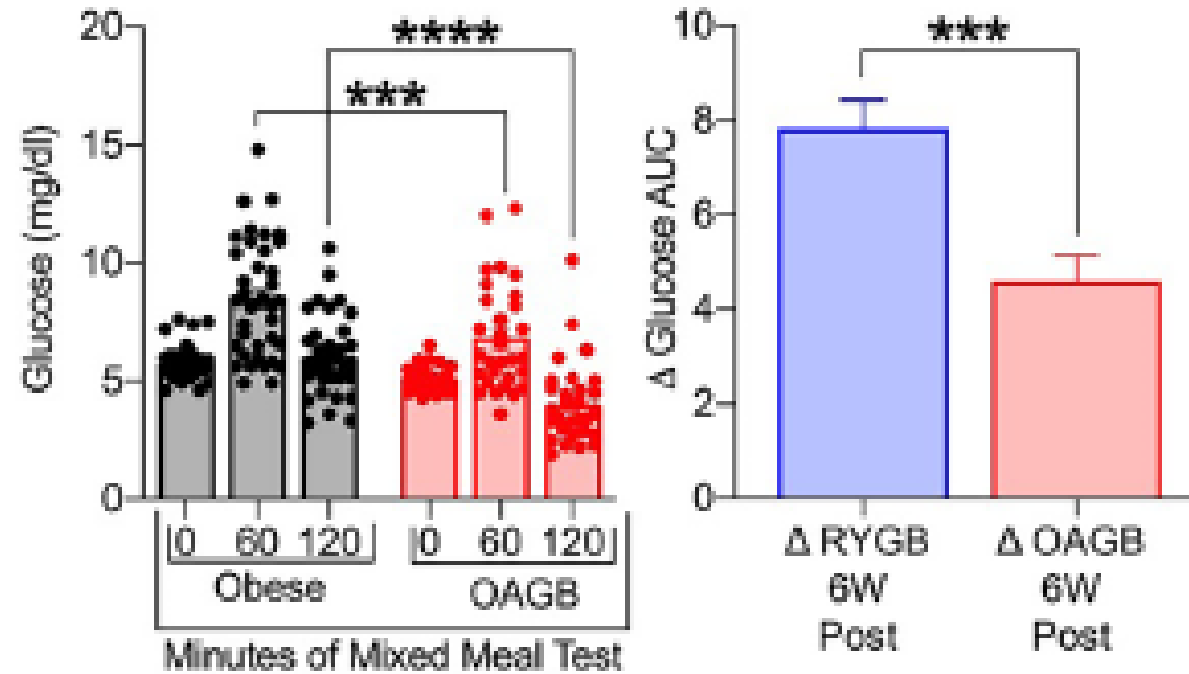
Metabolische Effekte GLP-1



Laparoscopic Roux-Y-gastric bypass versus laparoscopic one-anastomosis gastric bypass for obesity: clinical & metabolic results of a prospective randomized controlled trial

Omega vs Proximalen RY- Magenbypass nach 1 Jahr

Metabolische Effekte: GLUCOSE



Laparoscopic Roux-Y-gastric bypass versus laparoscopic one-anastomosis gastric bypass for obesity: clinical & metabolic results of a prospective randomized controlled trial

Omega vs Proximalen RY- Magenbypass nach 3 Jahr

Morbidität

	RYGB	OAGB	P
small bowel obstruction	1 (2.5)	0 (0)	1.000
anastomotic stenosis	1 (2.5)	2 (5.1)	0.615
marginal ulcer	4 (10)	11 (28.2)	0.048
internal hernia	2 (5)	0 (0)	1.000
dumping	5 (12.5)	3 (7.7)	0.712
insufficient weight loss/weight regain	4 (10)	0 (0)	0.05
chronic abdominal pain	1 (2.5)	1 (2.6)	1.000
de novo reflux symptoms	1 (2.5)	4 (10.3)	0.200
total	18	21	0.128

Laparoscopic Roux-Y-gastric bypass versus laparoscopic one-anastomosis gastric bypass for obesity: clinical & metabolic results of a prospective randomized controlled trial

Functional Changes in the Stomach and Esophagus after One Anastomosis Gastric Bypass- OAGB-BiFlux Trial

Primary Endpoint

Ulcer rate in the area of the gastrointestinal anastomosis, and the analysis of predictive factors for the development of an ulcer after 2 and 5 years

Secondary Endpoints

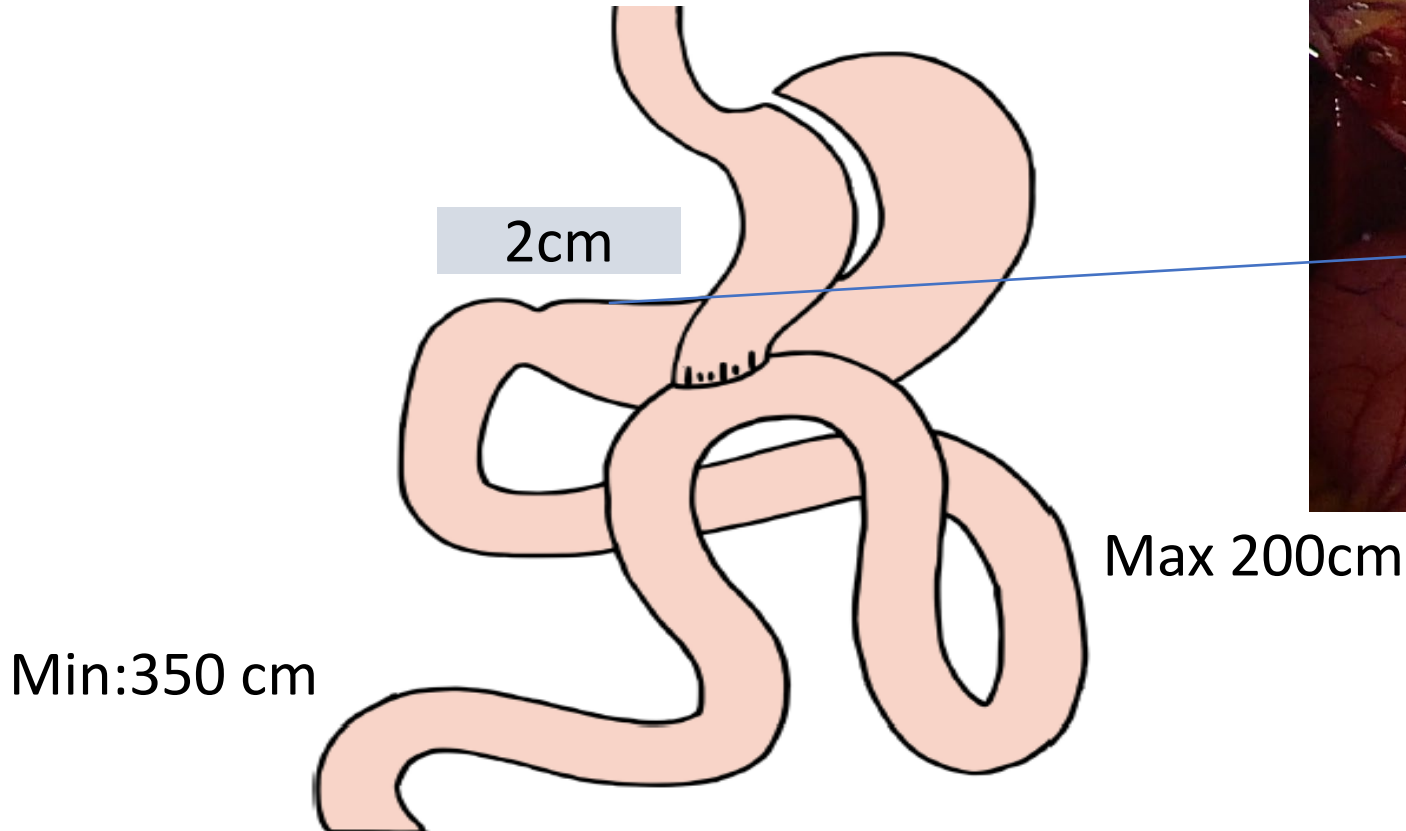
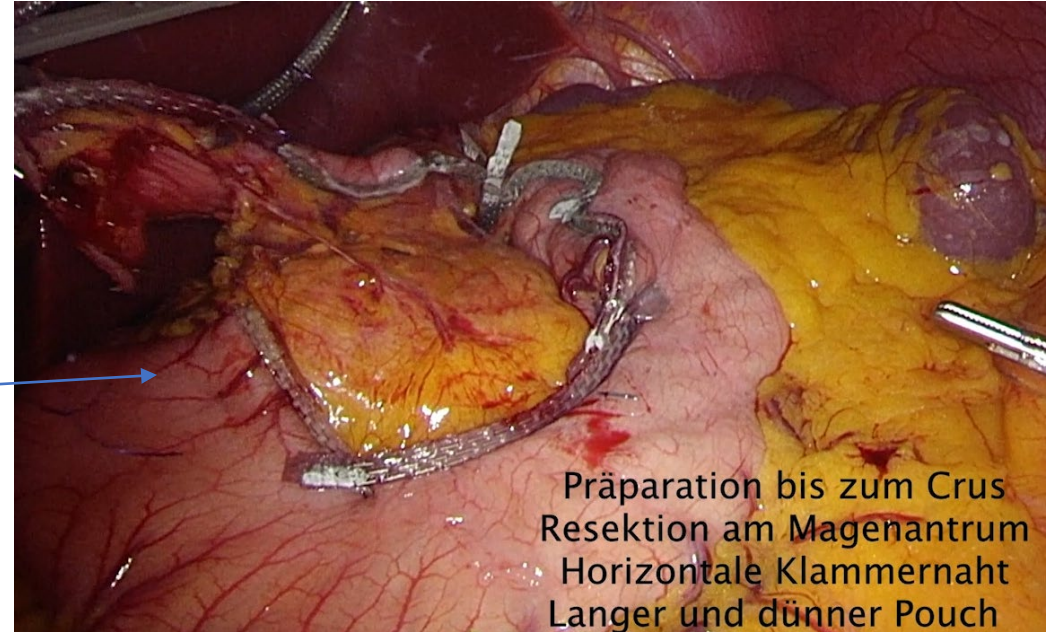
-weight loss % at 2 and 5 years

-changes in the esophagus or stomach detected by gastroscopy (macroscopic characterization using Los Angeles classification), tissue Biopsies, high-resolution manometry and impedance multi-channel pH metry

-Mortality , Morbidity

Functional Changes in the Stomach and Esophagus after 1 One Anastomosis Gastric Bypass- OAGB-BiFlux Trial

5-7 (45/60mm Stapler)
dissection Antrum



Gewichtsrebound

Patientenbezogen:

C2, Binge- Eating zu Grazing, Bewegungsmangel, Antidepressiva



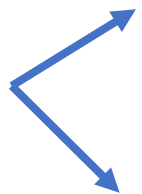
1. Ernährungspsychologie
2. GLP-1/ Chirurgie

Methodisch



1. GLP-1/ Chirurgie

Technisch



Sleeve: Antrum- Fundusüberschuss, Stenose

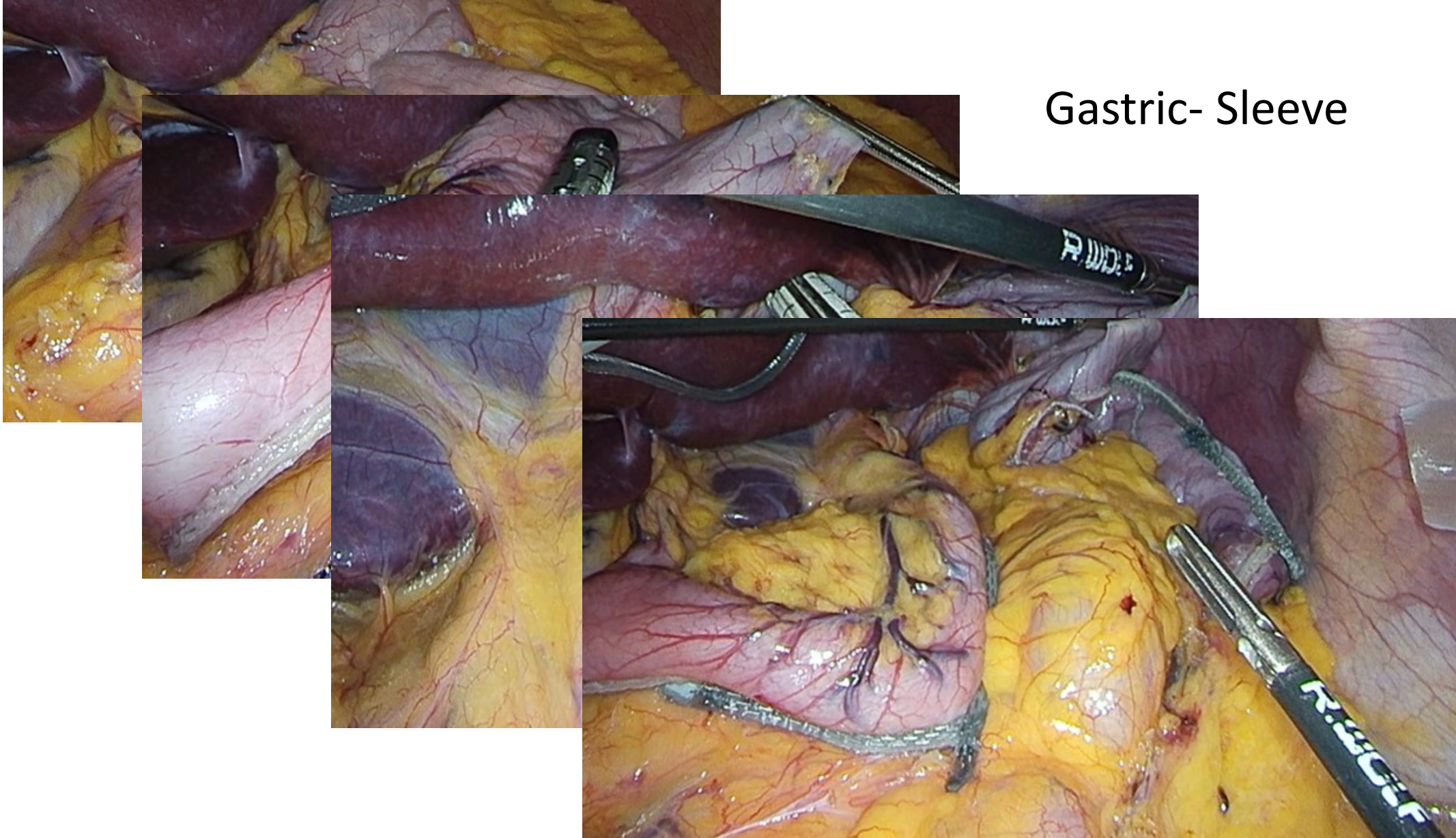


1. Chirurgie/GLP-1

Magenbypass: Fistel, Dilatation der Gastroenterostomie



1. Chirurgie/GLP-1

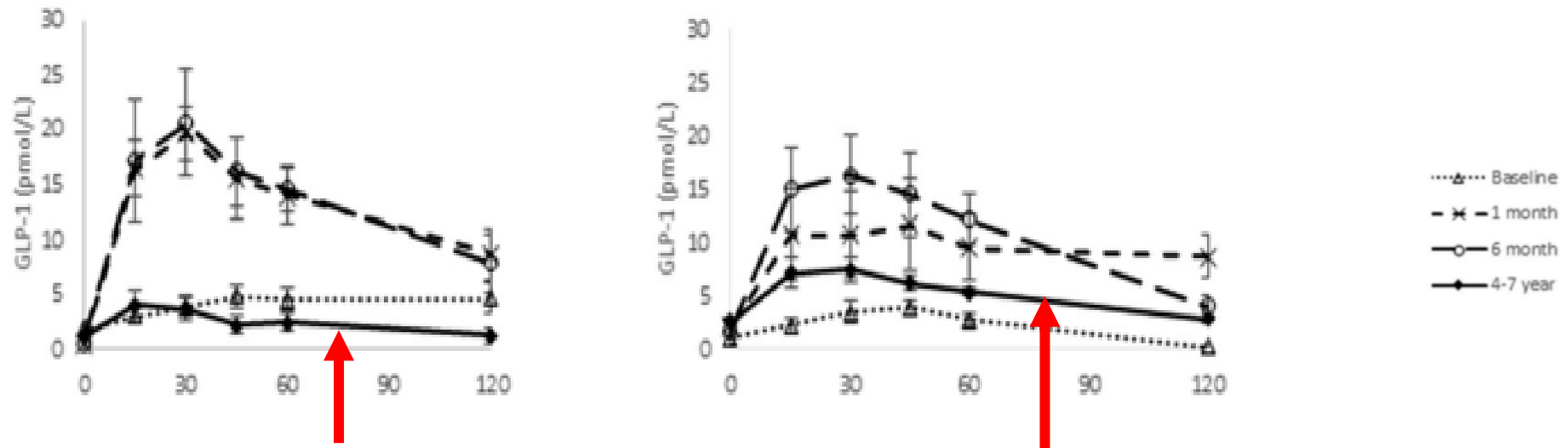


Gastric- Sleeve

Langzeitresultate

GLP-1 postprandial : Sleeve vs RY-Magenbypass

d: GLP-1



Effect of Laparoscopic Sleeve Gastrectomy on Static and Dynamic Measures of Glucose Homeostasis and Incretin Hormone Response 4-Years Post-Operatively

Gewichtsrebound

GLP-1 Ra bei Gewichtsrebound >15%
Follow up 6 Monate

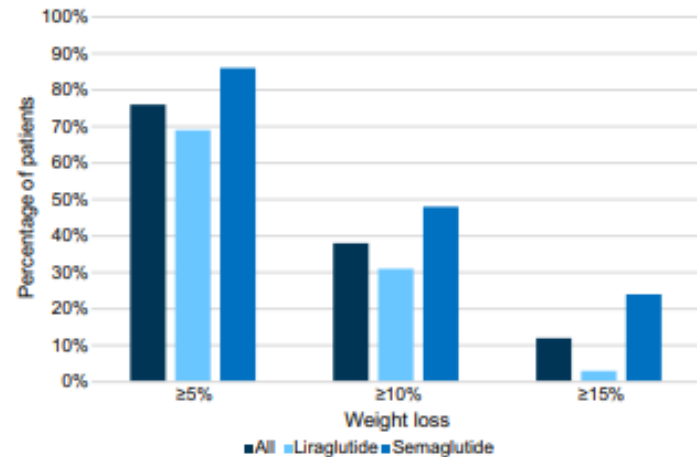


Fig. 3 Histogram of percentage of patients with $\geq 5\%$, $\geq 10\%$, and $\geq 15\%$ weight loss following 6 months of GLP1-RA treatment ($N=50$)

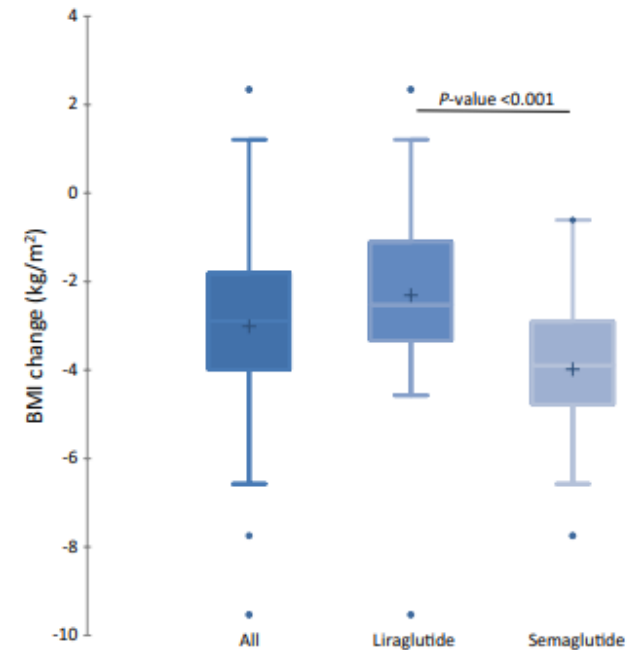
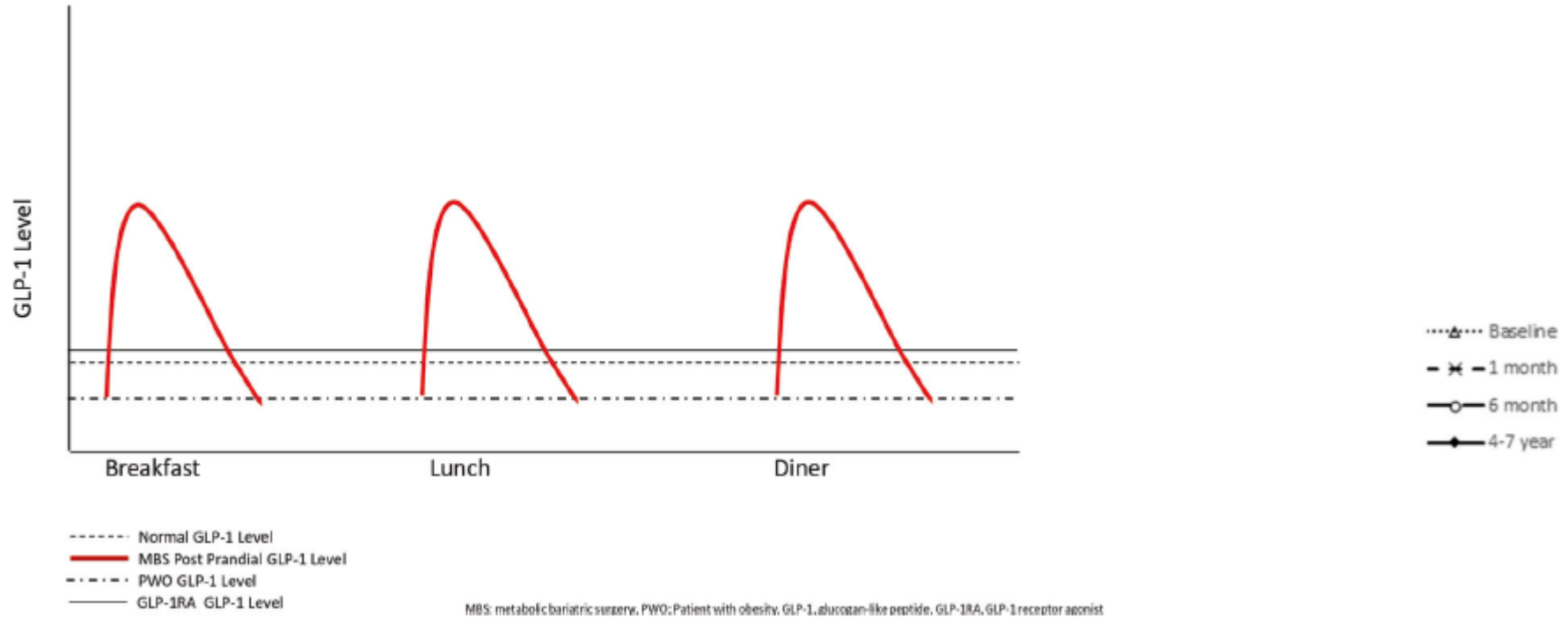


Fig. 4 Box plot showing the change in BMI following 6 months of GLP1-RA therapy ($N=50$), further stratified by liraglutide (3.0 mg [$n=28$] and 1.8 mg [$n=1$], daily subcutaneous injection) and semaglutide (1.0 mg, weekly subcutaneous injection [$n=20$] or 14 mg, daily oral intake [$n=1$])

Efficacy of the Glucagon-Like Peptide-1 Receptor Agonists Liraglutide and Semaglutide for the Treatment of Weight Regain After Bariatric surgery: a Retrospective Observational Study

Gewichtsrebound

GLP-1 RA plus Magenbypass?



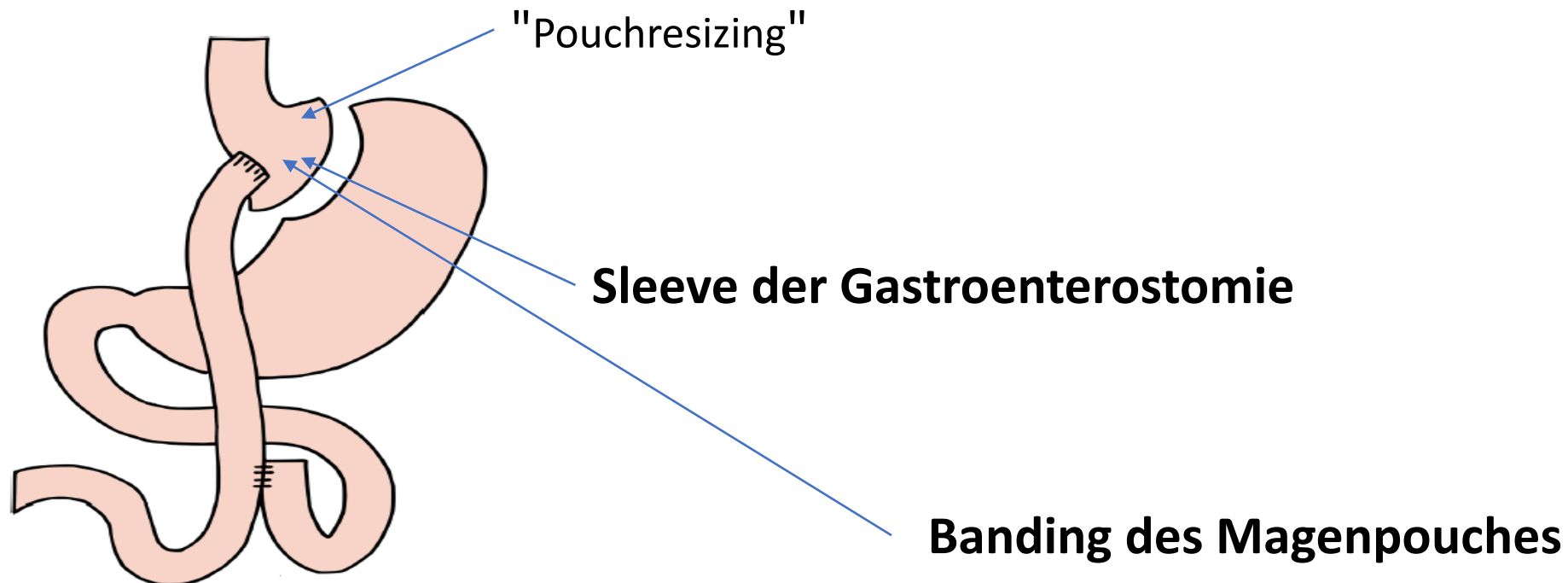
Bariatric Surgery

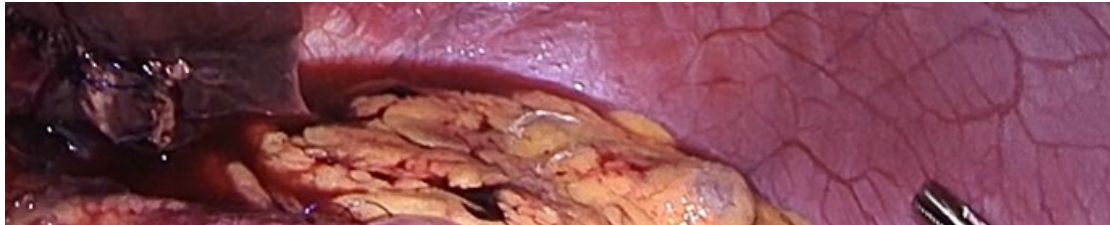
Post metabolic bariatric surgery weight regain: the importance of GLP-1 levels

Nursel Çalık Başaran^{1,2,3}, İdit Dotan^{2,3} and Dror Dicker^{3,4}

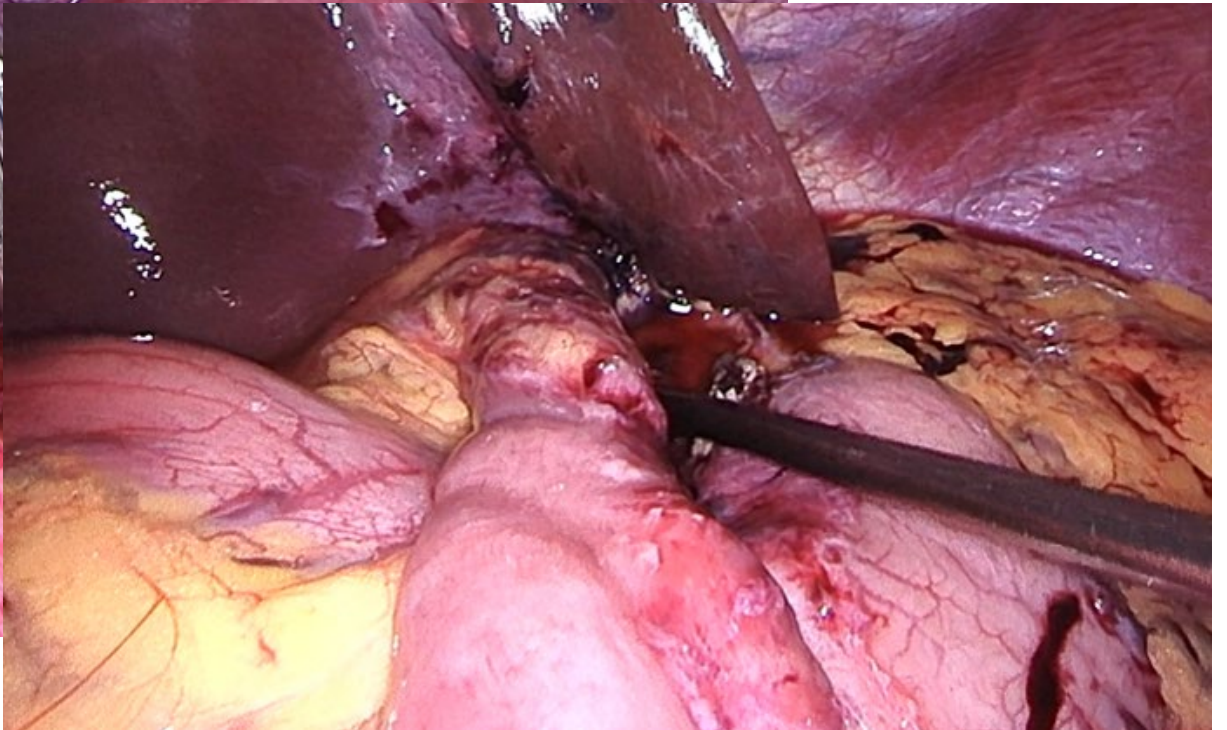
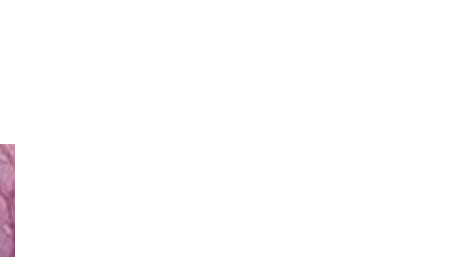
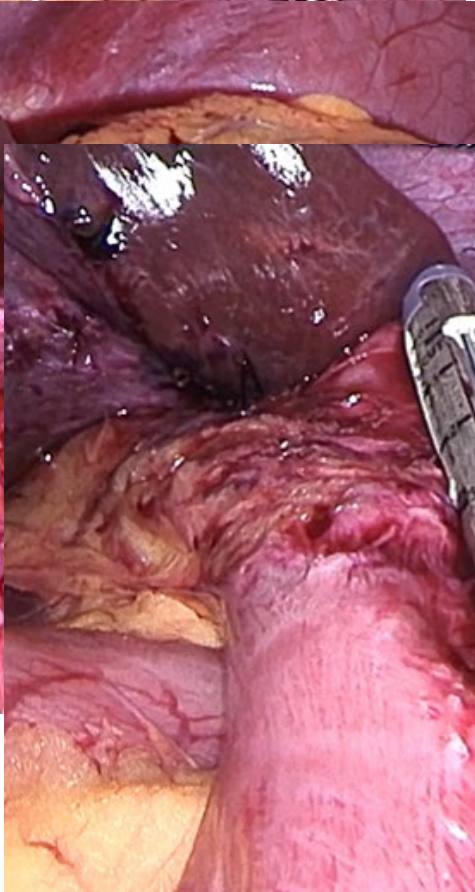
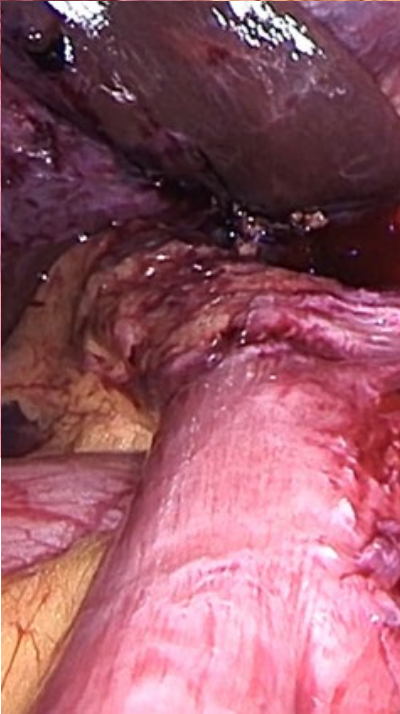
Chirurgische Optionen bei Gewichtsrebound

Verstärkung/Wiederherstellung der Restriktion



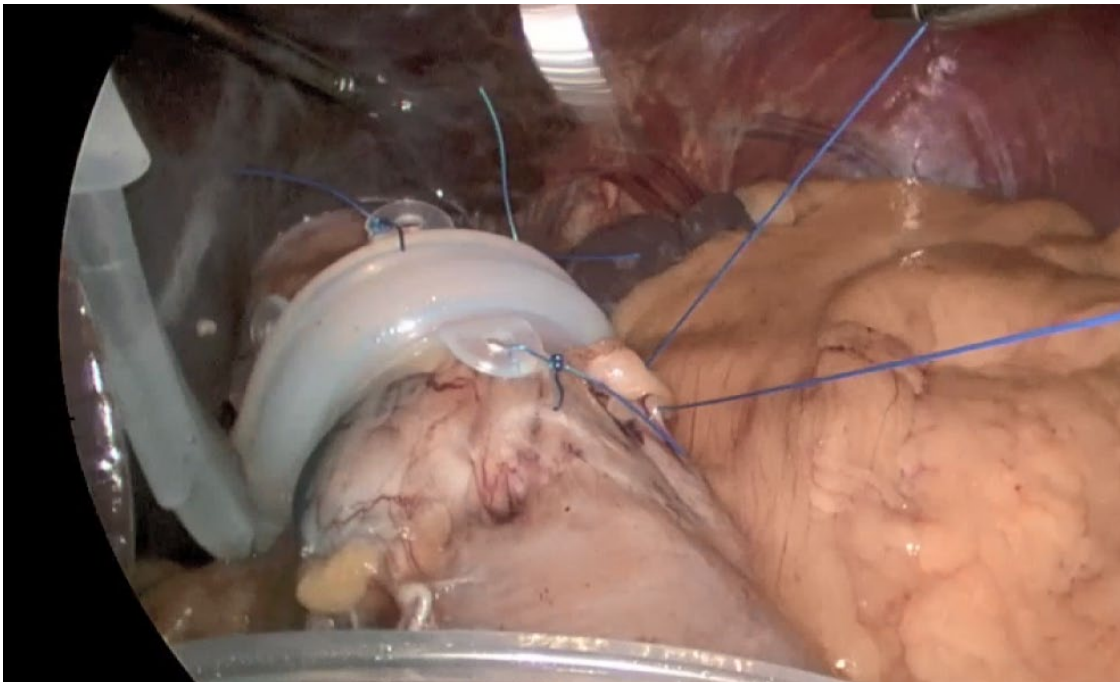


"Sleeve der Gastroenterostomie (> 2,5 cm)



Verstellbares Magenband

Banding des Magenpouches



N=14, Follow up 3 Jahre nach Bandimplantation

	Mean BMI ± SD (kg/m ²)	Mean %EWL ± SD
Before initial operation	45.3 ± 7.4	-
Before LAGB	35.0 ± 4.0	50 ± 16.7
At last FU	29.3 ± 6.3	82 ± 28.3
<i>P</i> value	<0,001*	<0.001*

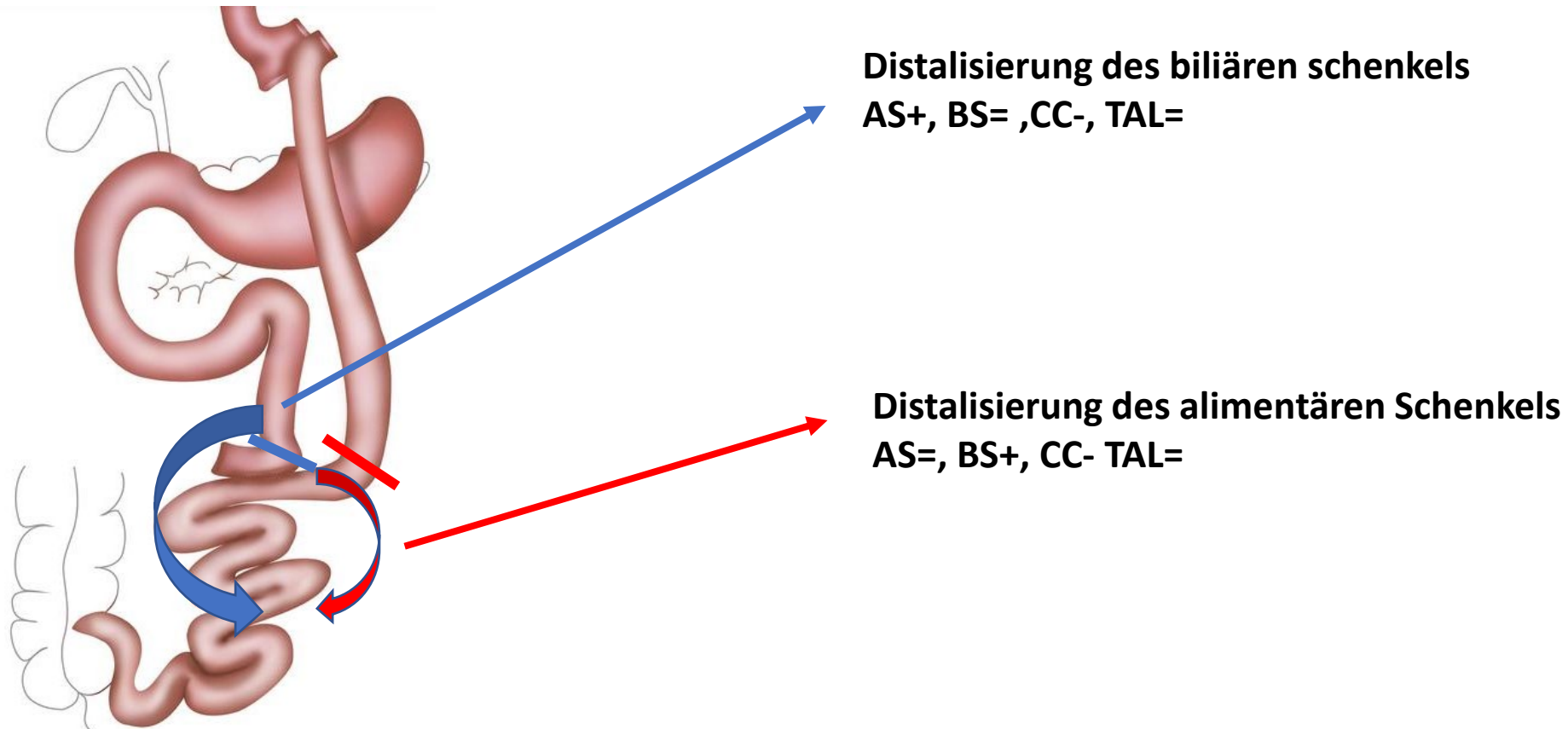
Revisional Adjustable Gastric Band in Roux-en-Y Gastric Bypass—Is It Worth It?

Ioannis I. Lazaridis¹ • Marko Kraljević¹ • Julian Süssstrunk² • Thomas Köstler² • Urs Zingg² • Tarik Delko¹

BMI: body mass index, EWL: excessive weight loss, FU: follow up
* *paired t-test*

Distalisierung des Magenbypasses

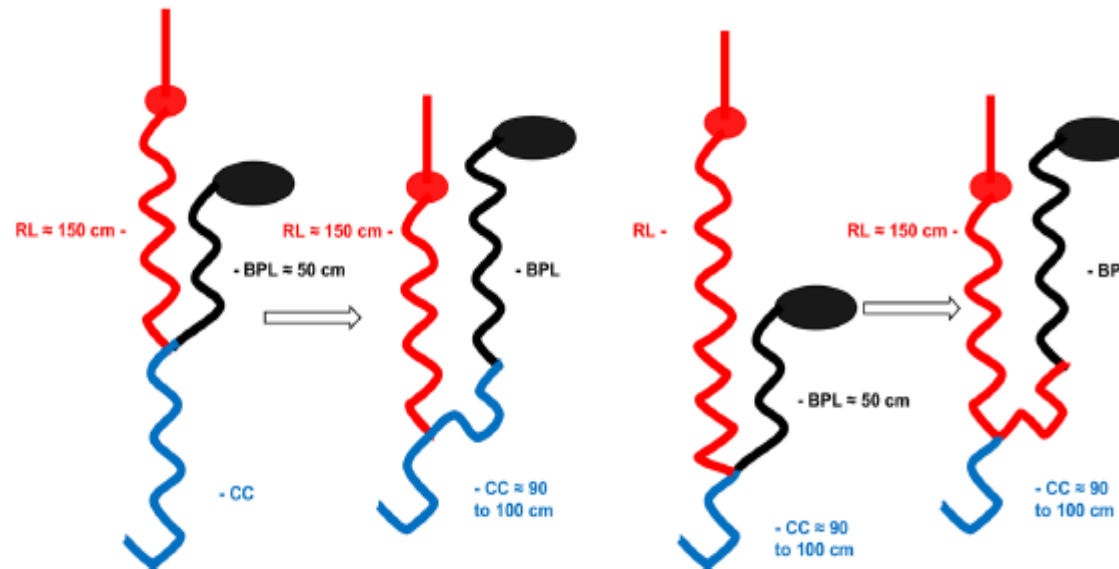
Verstärkung der Malabsorption/ Metabolik



Distalisierung des Magenbypasses

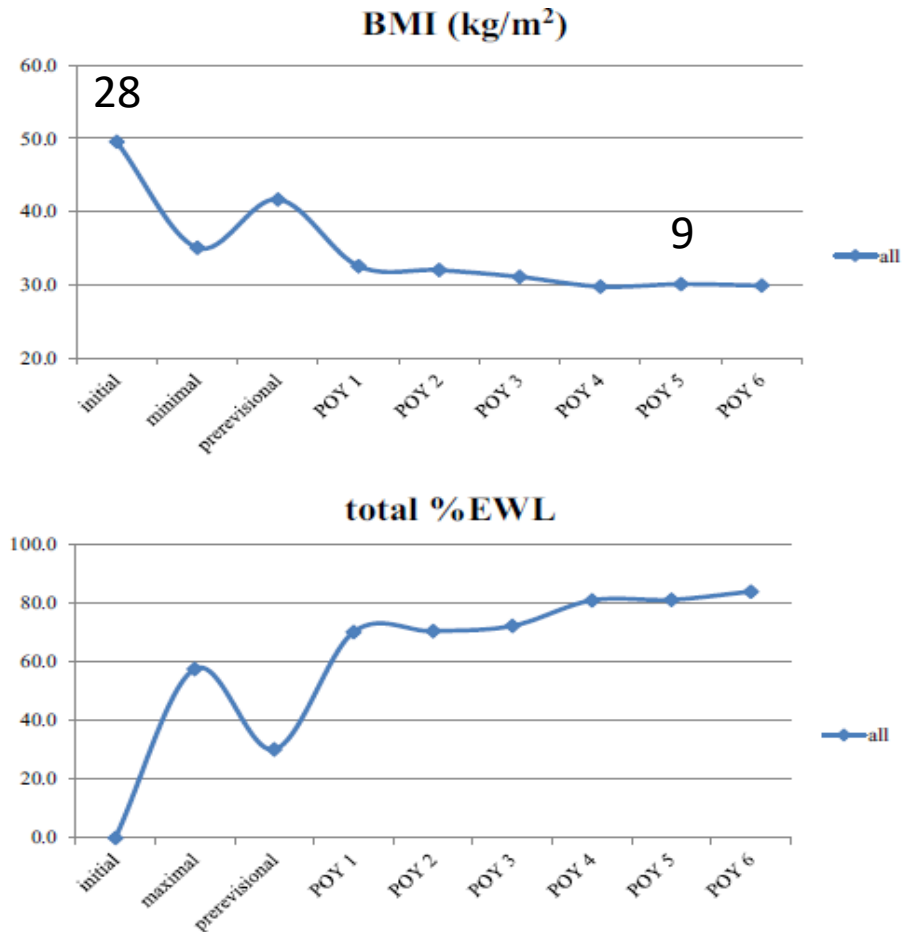
Länge der Dünndarmschenkel : AL 150cm, CC 100cm

Fig. 1 Diagram of revisional procedures with conversion either from PRYGB or VVLL RYGB to BPL RYGB



Revisional Surgery for Insufficient Loss or Regain of Weight After Roux-en-Y Gastric Bypass: Biliopancreatic Limb Length Matters

Distalisierung des Magenbypasses



Revisional Surgery for Insufficient Loss or Regain of Weight After Roux-en-Y Gastric Bypass: Biliopancreatic Limb Length Matters

Distalisierung des Magenbypasses

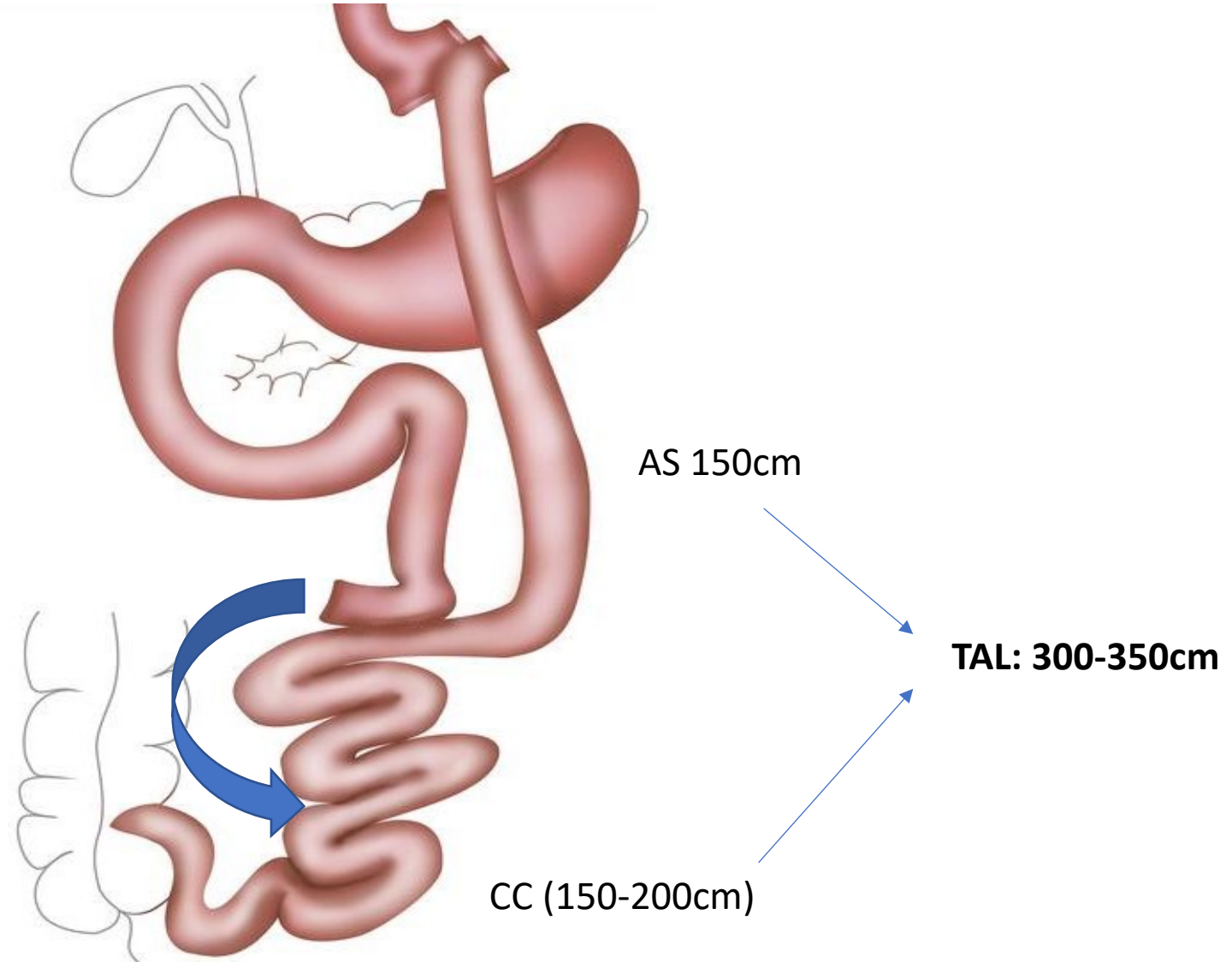
Table 1 Early and late surgery-related morbidity and mortality according to the Clavien-Dindo classification over the study period

Grade	Complication type	< 30 days	> 30 days
I	Incisional hernia	0	1
II	Pneumonia	1	0
II	Hypoalbuminemia*	0	2
II	Severe steatorrhea**	0	4
III	Surgical site infection	5	0
III	Bleeding	1	0
III	Small bowel obstruction	1	1
III	Incisional hernia	0	6
III	Internal hernia	0	1
III	Ulcer	0	2
III	Hypoalbuminemia*	0	6
III	Severe steatorrhea**	0	2
IV	Leak	0	0
V	Death	0	0

*Albumin < 30 g/L; **Required further therapy

Revisional Surgery for Insufficient Loss or Regain of Weight After Roux-en-Y Gastric Bypass: Biliopancreatic Limb Length Matters

Distalisierung des Magenbypasses



Langzeitresultate: Ulcera

Years	Patients at risk	marginal ulcers diagnosed	% not affected
0	568	0	100
1	481	36	93.5
2	359	20	89.1
3	233	20	83.5
4	160	4	81.9
5	93	4	79.5
6	26	2	77.2

Incidence and Prognostic Factors for the Development
of Symptomatic and Asymptomatic Marginal Ulcers After Roux-en-Y Gastric Bypass Procedures
Julian Süsstrunk^{1,2} & Lara Wartmann³ & Diana Mattiello¹ & Thomas Köstler¹ & Urs Zingg¹

Langzeitresultate: Ulcera

Table 3 Multivariate logistic regression of potential prognostic factors for the development of marginal ulcers

Covariates	HR	95% CI	<i>p</i> value
HbA1c	1.18	1.00–1.40	0.045
Current smoker	2.65	1.64–4.23	< 0.001
Alcohol consumption 2–3× weekly	1.40	0.88–2.24	0.157
Alcohol consumption daily	1.67	0.74–3.76	0.216
Non-steroidal anti-inflammatory drugs	1.05	0.52–2.13	0.891
Corticosteroids	1.63	0.61–0.75	0.218
OSAS	1.21	0.76–1.92	0.422
Anticoagulants	1.60	0.86–2.99	0.139

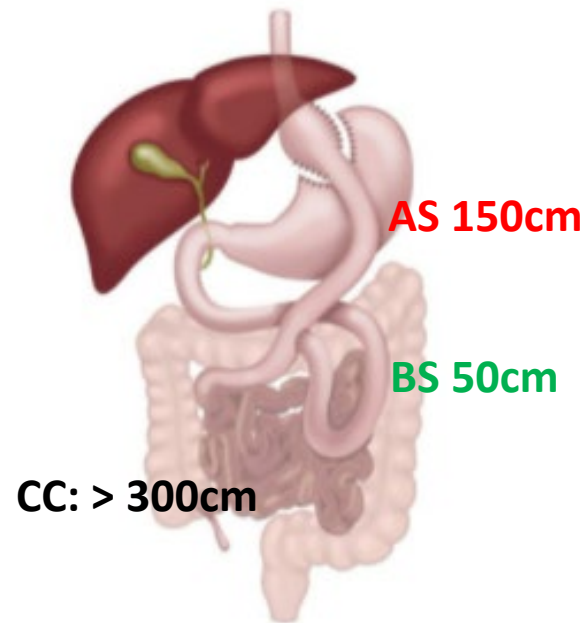
HR hazard ratio, *CI* confidence interval, *OSAS* obstructive sleep apnea syndrome

40% Routine- Gastroskopie nach 5 Jahre

24,4% asymptomatische Ulceras

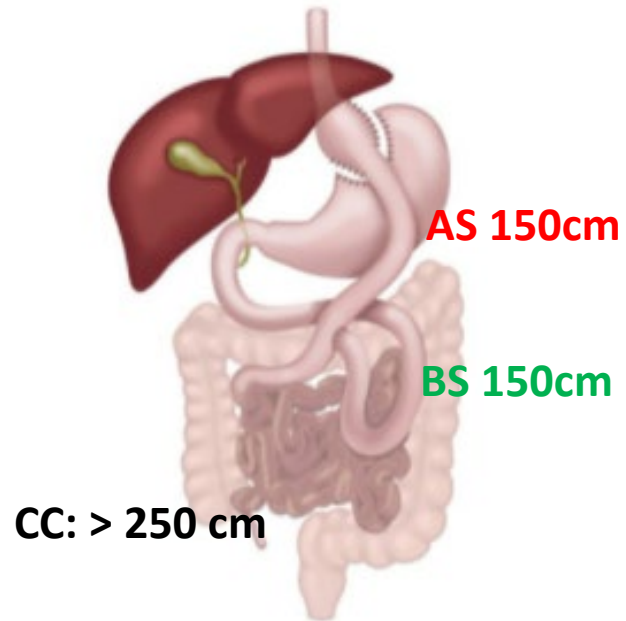
88,4 % konservativ behandelt, 11,6 % operativ

Proximaler RY-Magenbypass



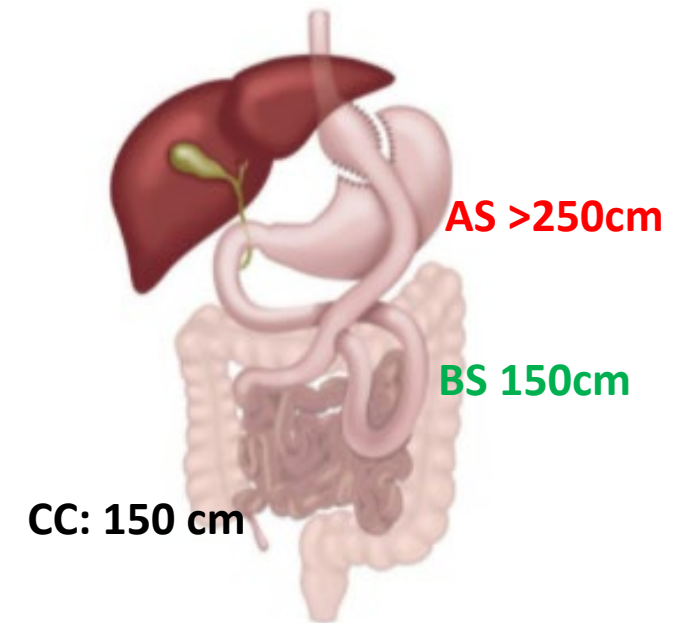
Roux-en-Y-Magenbypass
© Spital Limmattal

Metabolischer RY-Magenbypass



Roux-en-Y-Magenbypass
© Spital Limmattal

"LL" RY-Magenbypass



Roux-en-Y-Magenbypass
© Spital Limmattal



Welcher Eingriff für welchen Patienten?

BMI>45

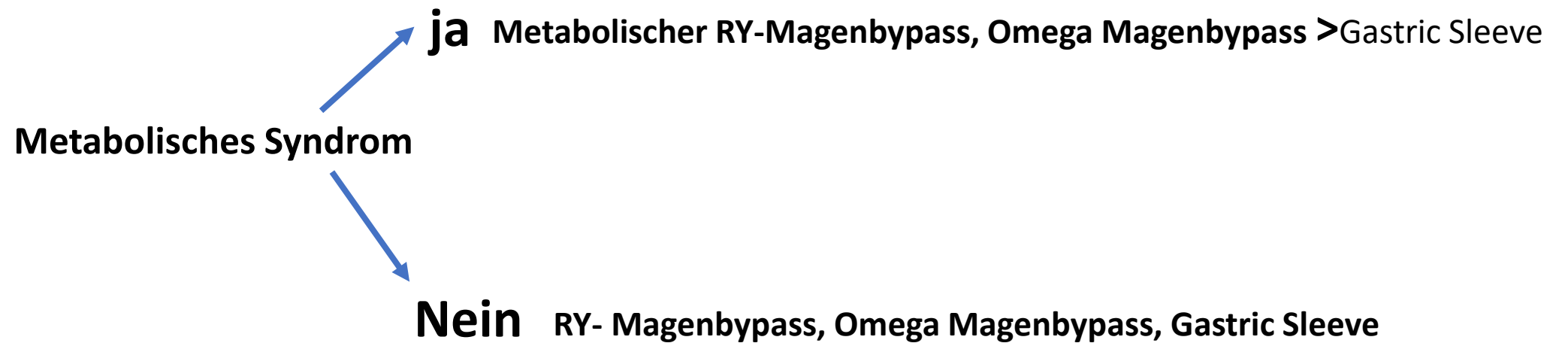
Malabsorptiver, metabolischer RY-Magenbypass, Omega Magenbypass > Proximaler RY-Magenbypass > Gastric Sleeve

BMI<45

Proximaler RY-Magenbypass, metabolischer RY-Magenbypass, Omega Magenbypass > Gastric Sleeve

Welcher Eingriff für welchen Patienten?

Metabolischer Status



Welcher Eingriff für welchen Patienten?

Symptomatische Refluxerkrankung

RY-Magenbypass > Gastric Sleeve

Welcher Eingriff für welchen Patienten?

Essgewohnheiten (Sweet-Eating, Binge Eating, Big Eating, Fat-Eating)

Sweet Eating

Omega Magenbypass, RY-Magenbypass > Gastric Sleeve

Binge Eating

Gastric Sleeve > Omega Magenbypass > RY- Magenbypass

Cave: Oftmals Suchtverlagerung posoperativ, z.B Alkohol

Big Eating

Gastric Sleeve > Omega Magenbypass > RY-Magenbypass

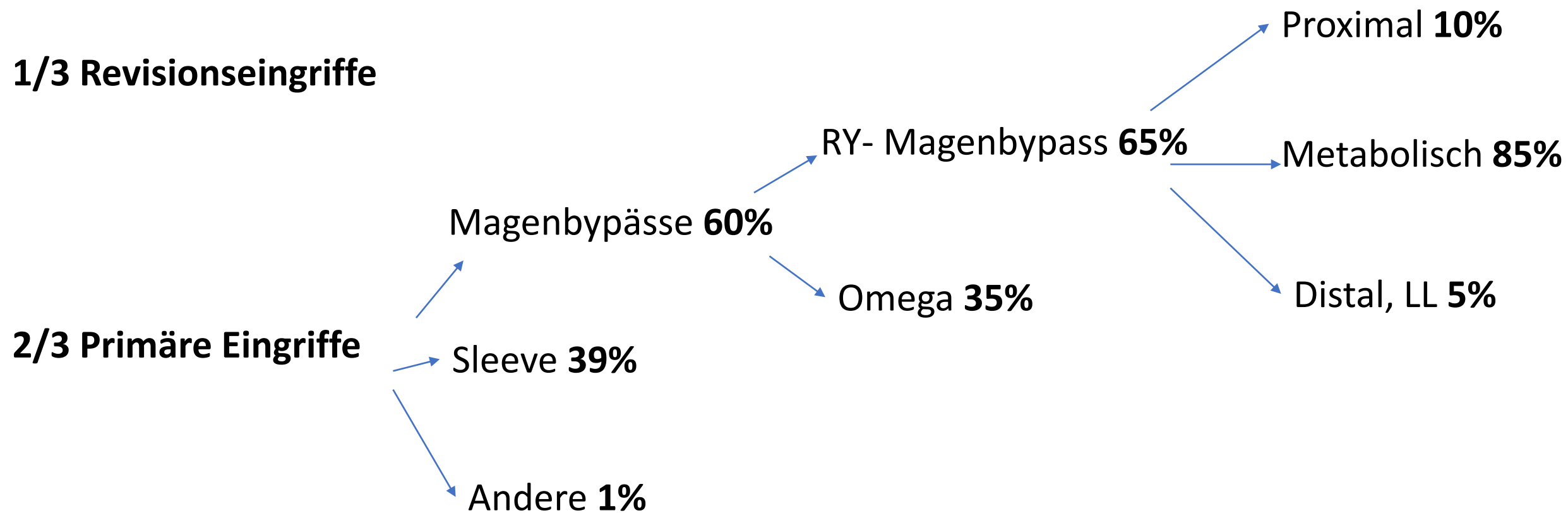
Welcher Eingriff für welchen Patienten?

Psychiatrische Erkrankungen (*Borderline*, (*Depression*), *ADHS*) oder schlechte Compliance

Gastric Sleeve > RY-Magenbypass ,Omega Magenbypass

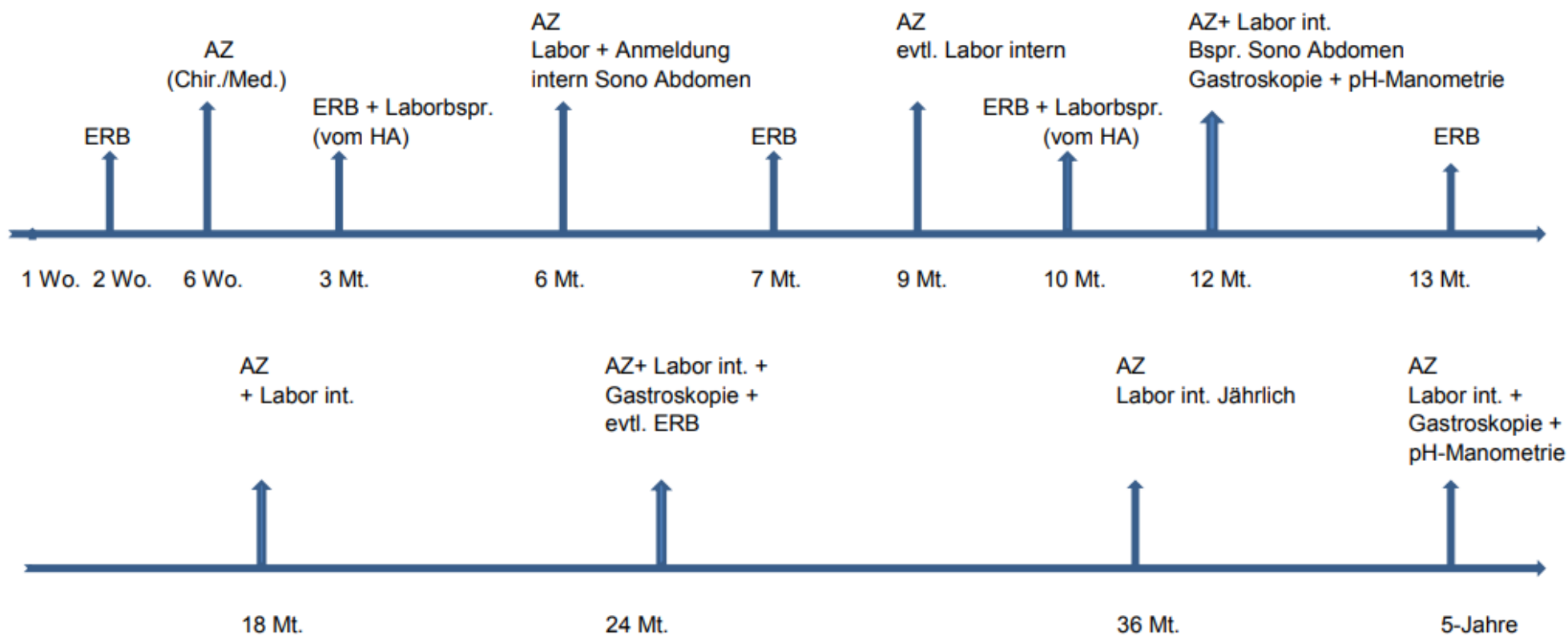
Cave Borderline: Häufig assoziiert mit Bulimie

Magenbypass heute am Adipositaszentrum Limmattal



ERB: Ernährungsberatung
 AZ: Adipositaszentrum Sprechstunde
 HA: Hausarzt

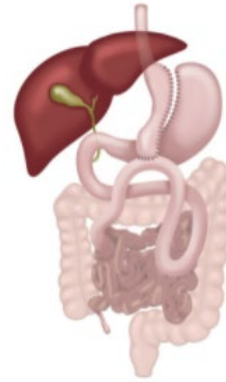
Nachkontroll-Schema Bariatric



- ✓ Malabsorptive Eingriffe alle 6 Monate lebenslang nach Schema
- ✓ Alle anderen Jährlich lebenslang nach Schema
- ✓ Falls Refluxoesophagitis nach 2 Jahren Gastroskopie



Roux-en-Y-Magenbypass
© Spital Limmattal



Omega Magenbypass
© Spital Limmattal



	RYGB	OAGB	Pacebo	Semaglutide 2,4 mg
%TWL 1 Jahr	31.5	37.4		
%TWL 4 Jahre	28.8	35.4	1,5	10,2

140 Kg

99 Kg

90 Kg

125 Kg

Adipositaszentrum Limmattal



Kontakt: adipositaszentrum@spital-limmattal.ch

www.adipositaszentrum-limmattal.ch